The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees.

VOL. XLVII. CHICAGO, ILLINOIS, SEPTEMBER 29, 1906. No. 13

Original Articles

PROPRIETARY MEDICINES.*

A. JACOBI, M.D., LL.D.
NEW YORK.

Goethe once said that the most interesting book that could be written would be a treatise on human errors. In that book, large like a library, the history of quackery—well meant or deceitful—would fill a large place. The distrust of medicine and its powers is as old as the world, for not many ever knew or cared to appreciate what medical science or art is capable or not of accomplishing, or should be held responsible for. Besides, the more uncultured or uncontrolled the human intellect the greater is the predominance of mysticism. In Greece quackery was rife and Aristophanes made it the subject of ridicule. The elder Cato, who advised the use of cabbage against all sorts of disease and employed witchcraft and incantations for luxations, demanded the expulsion from Rome of the Greek physicians. The iatromechanics, who taught the direct interdependence of stars and man and prescribed pills compounded during the conjunction of Jupiter and Venus, and the medieval priests who cured with prayers and processions and auto da fés, must surely have met with failures and driven the sick somewhere else. Even the specialists among the saints, St. Anna the ophthalmologist, St. Judas the doctor for cough, St. Valentine for epilepsy, St. Rochus the veterinarian, may have made mistakes and proved incompetent.

Nor was the public always edified by the doctors in other respects. Hippocrates complains bitterly of the contests of doctors among each other. More than 2,000 years later Peter Frank thought and advised seriously that the only way to procure an orderly consultation was to call in the police. The maltreatment they were exposed to in the Middle Ages, the contempt in which wounds and ulcers were held, so that the medical faculty of Paris about 1300 committed their candidates by oath not to practice surgery; the barbarous methods of treatment by fire for the dangerous body fluids to which everything was attributed, and afterward the nauseating draughts with which the sick were punished until no better man than Hahnemann tried to redeem them—all that did not contribute to add to the dignity of the profession and to the confidence of the public. All that drove the masses into the arms of the sectarians and the quacks.

Then followed the era of scientific medicine, little more than half a century ago. It was built up on anatomy and physiology and was studied on biologic lines. We should have suspected that the darkness of quackery would disappear before the new light. On the contrary, it has grown in geometric proportions until the accumulated ignorance of quacks and fakers has become a power in every land. The Germans, who like to style themselves the nation of thinkers, have more quacks than any other people. Indeed, Saxony and Bavaria have one quack to two regular physicians; Berlin itself has two to nine. It is in Berlin that 29 per cent. of the men among the quacks—including clergymen, workmen, stewards, bathhouse keepers, shepherds and university students—and 14.4 per cent. of the women had, before embarking in the practice of doing the sick people, collided with the law courts on account of theft, forgery and sexual crimes. It is Berlin that has a judge who, in discharging one of that ilk, said the man deserved the greatest confidence, for he was in possession of very good prescriptions obtained from the servant of a famous dermatologist.

Scientific medicine, as developed by the Vienna school more than fifty years ago, ended in nihilism. Patients, however, would not long be satisfied with being merely percussed and auscultated and autopsied. They had the pardonable wish to be healed and cured. But the only chance they were given was to serve as scientific material. With that they were not pleased and ran off to fill the offices and the coffers of the quacks. Then, after Skoda and Rokitansky, came Virchow, the great man of the century, the enemy of mysticism and obscurantism, the daily discoverer of new facts and new methods in pathologic anatomy, the founder of the cell theory, the great anthropologist and hygienist, the assiduous therapeutist of the individual man and of society, the very realization of what Aristotle meant by his "politician," that is, the philosophical and scientific statesman. The great mistake of his life resulted from his democratic confidence in the people. His idealism moved him to believe that the people would instinctively distinguish between the physician and the quack; it was on his advice that the Prussian parliament opened the doors to the fakers and reduced the medical profession to a trade. That was in 1869. He learned too late that people do not know who is who in medicine. People are not even taught by lectures or pamphlets or books, which are superfluous to the physician and not read by the masses. It is their nature to prefer to be in opposition at all hazards. They would rather pay hundreds of millions annually for pseudo-doctrines as displayed in books and journals and for proprietary medicines.

Do you care to know about how many there are? Up to Oct. 12, 1900, there were United States patents for 321 disinfectants, 30 extracts, 48 hair dyes and tonics, 180 insecticides, 376 internal remedies, 56 plasters, 371 topical remedies, 78 veterinary medicines. There were trademarks for drugs and chemicals, 319; medical compounds, 5,794, which increase at the rate of 250 annually. The State Board of Health of Massachusetts has examined about sixty proprietaries for their percentage of alcohol, according to the board's report

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

Howe's Arabian Tonic, "not a rum drink," contains 13.2 per cent.; Parker's Tonic, "purely vegetable," recommended for the cure of inebriates, 41.6 per cent.; Schenck's Seaweed Tonic, "entirely harmless," 19.5 per cent; Copp's White Mountain Bitters, "not an alcoholic beverage," 6 per cent; Greene's Nervura, 17.2 per cent.; Hoofland's German Bitters, "entirely vegetable and free from alcoholic stimulants," 25.6 per cent.; Kaufman's Sulphur Bitters, "contains no alcohol," 20.5 per cent. and no sulphur; Whiskol, "a non-intoxicating stimulant," 28.2 per cent.; Golden's Liquid Beef Tonic, "for treatment of alcohol habit," 26.5 per cent.; Hood's Sarsaparilla, 18.8 per cent.; Peruna, 28.59 per cent.; Lydia Pinkham's Vegetable Compound, 20.61 per cent.; Kilmer's Swamp-Root, 7.32 per cent.

We, the doctors, like Virchow, our great master, are responsible for a great deal of this injury that is done to the people. For a baby it is we that prescribe artificial foods, the composition of which we do not know. What Nature gives us at a low price—milk, cereals, salt and sugar—we know and therefore underestimate. Nature is democratic and offers the best she has for the rich and the poor alike. We covet what is unknown and high-priced. We prescribe nostrums of known or unknown composition; the latter is not far from criminal, the first would be excusable but for two reasons. One of them is that the manufacturer looks for the good he can do to himself, and that factories are not run for your benefit; the second is that an unalterable formula, though its composition may correspond with the label, should not be used by the physician who deals with a variety of cases, ages and circumstances. I do not blame a layman who indulges in self-medication after being treated by his physician with a remedy he sees advertised in the glowing headlines of his daily paper. I have known at least one of the infant foods that was advertised and sold for twenty years, and then publicly discarded by the manufacturer, who claimed to have at last found the proper — probably cheaper — compound. The layman must be excused for refusing to pay a doctor in addition to the advertising expenses of the tradesman.

We physicians do more. We take medical journals that advertise nostrums, that print "reading notices" of proprietary medicines, old and new; that sell pages of their issue to the trade; that print eulogies of factory products in the shape of "original articles;" that alternate their medical and advertising pages. When I spoke of this abomination before the International Medical Congress of Paris in 1900 a Western medical journal of that style asked the appropriate question: "Who, after all, is this Dr. Jacobi? If it had not been for us, the journals, he would have lived and died in obscurity."

Thus it is that even the mind of the medical man is gradually poisoned. What these sheets do not, perhaps, accomplish fully, the glib agent—sometimes an M.D., who gains access to you by the card he sends in to you—will complete. He dumps his wares—his blotters, inkstands, paper-knives, pencils, blank books and almanacs—on your table, either personally or through the post-office. Well, he can afford it. For the poisonous anilin preparation with sodium bicarbonate which he baptizes with a hybrid name and which is prescribed by thousands of us yields him a thousand per cent. of profit. And how? It has been given admission to what should be your sacred medical book, the United States Pharmacopeia. That is why you find thousands of doctors and hundreds of apothecary shops with stacks of advertising sheets and quackish booklets, but without a United States Pharmacopeia or the American Pharmaceutical Association's formulary. That is why a friend found the expensive prescription of a prominent New York practitioner which read: "Remedium Spontaneum, Radway," and which meant no less than merely cheap "Radway's Ready Relief." The same friend took the trouble of examining 50,000 prescriptions compounded in a number of drug stores. Between 1850 and 1873 he met on the prescriptions of physicians no nostrums and no machine-made tablets; in 1874, 1 in 1,500; between 1875 and 1880, 2 per cent. of them; 1880-1890, 5 per cent.; 1895, 12 per cent.; 1898, 15 per cent.; 1902-1903, from 20 to 25 per cent. In a large drug store, one of the gaudy ones, to which the prescriptions of our fashionable doctors are sent, I was assured that 70 per cent. of the prescriptions sent in by reputable physicians contained either nostrums pure and simple or as a part of a compound.

Perhaps it would lead too far to examine all the reasons for that demoralization. But one of them should be generally known and appreciated, which is that there are very few medical schools a graduate will leave, diploma in hand, with the knowledge and practice of writing a prescription. Our medical schools neglect their duties by thus omitting to teach the art of medicine in combination with what is exclusively and pompously called "science." Let the schools remember what every one of us general practitioners can tell them, that medicine means both science and art. I have here the prescription, dated April 14, 1906, which was given to a patient, who swallowed the stuff, by the professor of pharmacology and therapeutics in one of the great universities between the Atlantic and the Mississippi—very far from the Mississippi—which is a mixture of scientific and queer langage, viz., "Bili-salol"—what is bili-salol in the Pharmacopeia?—"0.25, dentur tales doses No. C, three to five pills after meals three times a day."

If there is so much proprietary medicine prescribed, and so much quackery, clear your own skirts, professors and doctors. The quacks and manufacturers smile at our unctuous words and unclean hands.

PROPRIETARY MEDICINES AND THEIR ABUSES.*

GEORGE DOCK, M.D.
ANN ARBOR, MICH.

Proprietary medicines are substances which some one has an exclusive right to make or sell for medicinal purposes. The exclusive right may depend on secret methods of manufacture, or on a patent on the method of preparation, as in Germany, or on process and substance both, as in America, or on a copyright on the substance. A patent on the name, or a copyright, is one of the most effective methods of acquiring and maintaining exclusive rights in the case of medicines whose virtues are fictitious, though secrecy is in some cases equally effective, for a time.

Proprietary medicines are not either good or bad by reason of their origin. In the language of the day, none are "ethical" or "unethical" *per se*. The possibility of greatest danger occurs among secret preparations and depends partly on the fact that secrecy regarding a remedy may have more serious consequences than secrecy in the manufacture of steel or rope and many other in-

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

dispensable articles. The chief objection is that no dependence can be placed on the constancy of action of such substances, and that no certain comparisons can be made of observations on their action. They are not fit for scientific deductions.

There is no essential difference between proprietary medicines advertised exclusively to physicians and those advertised to the general public—the former in medical periodicals or special circulars, the latter in newspapers, handbills or almanacs, or on rocks, fences and barns. These are, perhaps, more frequently of secret composition, but recently this difference has been abandoned with great ostentation by some makers of so-called "patent" medicines. One or the other may be honest in intent and harmless or even useful in effect, just as either one may be fraudulent in conception and dangerous in use. The same lawless nomenclature is followed in both cases, the euphonious or hideous, outlandish or suggestive names being much alike in all. As a further evidence of similarity, a preparation that begins most blatantly in newspapers or on fences may in time find a welcome in reputable medical journals, and, on the other hand, a remedy first advertised to and used by physicians may in time be advertised in newspapers or form the leader in a cut-rate drug store or on the drug counter of a department store.

It is difficult to discuss proprietary remedies in a comprehensive way, but impossible to specify without becoming lost in the endless confusion they present. Certain classes stand out prominently. So there are synthetic compounds, active principles and new salts, real discoveries in chemistry that may have the virtues and drawbacks of chloral hydrate, sulphonal, urotropin, of salol, codein, cocain and others. They are usually put on the market with very little preliminary testing, but with the most sweeping claims. There are mixtures of these with other substances, sometimes representing an advance in pharmacy, often not. Then, there are preparations, whose chief recommendation is that they are of pleasing appearance or taste—"elegant," in the language of practical pharmacy. Though no more efficient than plainer preparations, they seem capable of filling a useful purpose, but are often hampered by secrecy of composition or unfounded claims of far-reaching therapeutic action. Expensive advertising and lavish distribution of "samples," neither of which should be necessary in legitimate trade, enormously raise the price at which these are sold.

It is unfortunate that the laws and customs of ownership do not permit a clearer separation of various classes. There is a deep-seated objection, on the part of most physicians, to the taking out of patents on such inventions as instruments or drugs, but it seems to me that this attitude is wrong in principle and partly responsible for a good deal of the demoralization now obviously existing. I am speaking, of course, of genuine discoveries and not of mixtures or formulæ.

It is a curious and paradoxic fact that no objection is made to physicians taking out copyrights on books, yet there is no essential difference. In the present organization of society, it is not only legal, but natural and proper, that any one making an invention or discovery of value should be able to realize a material return for his pains or ingenuity, and this right can best be preserved by patent. Jenners and Pasteurs will doubtless continue to investigate without hope or expectation of gain, for the love of experimentation, and will achieve not only glory, but also more material rewards, but that is no reason for checking inventive talent of a lower order. The man who invents a new dye may make a fortune. Why not the man who invents a drug that will do for pneumonia what quinin does for malaria?

Regarding instruments, if not protected, imperfect imitations are put on the market. No one is benefited except the makers, who deserve only the ordinary returns for their part of the transaction. If the inventor wishes to lower the price he can easily forego his royalties and give the buyer the benefit. I do not intend to discuss the question as to the profit derived from patents on books, instruments or medicines, though there is a matter for discussion on this point, but merely to emphasize the propriety of allowing inventors or authors to control, for a time at least, the manufacture of their products. The incidental fact that the price of the article may be enhanced by the patent does not affect the question materially. Prices of medicines will always be regulated, like other commodities, by the law of demand and supply. If fashion causes an elevation of price beyond the real value of the article, as occurs with many other things besides drugs, this does not seem a sufficient reason for interference with the well-known laws of trade.

Perhaps the strongest objection against the owning of patents on instruments or medicines by physicians, but one that is rarely expressed, is the danger of abuse in ways not open to the usual objects of trade. An author can hardly stimulate the sale of a book in any but obvious ways, but a medical man, especially if he has a reputation as a scientist, might excite an artificial demand for an instrument or a new remedy. Yet the danger of this is much more likely to exist, and to a greater degree, if the ownership is disguised, as it may be now, and in fact sometimes is. Publicity in such a case, as in others, seems the most promising check to dishonesty either intellectual or financial.

So far I have assumed that a proprietary medicine may be of value. Such a medicine may even be of very great value. Many of the newer nostrums, some of the very ones most objectionably advertised, have not only been imitated by manufacturing pharmacists openly patronized by the profession, but have even been admitted to the Pharmacopeia with a haste not characteristic of sound therapeutics.

I do not think we realize clearly enough the enormous waste of time and energy in the trial of new remedies. Many are doomed to early oblivion, as a perusal of the advertising pages of any series of medical journals makes clear. Just as the names of nostrums advertised in newspapers and trolley cars change year after year, so do those in medical journals. Many others would disappear, but for costly advertising, which is, of course, paid for by the purchaser.

Two sets of evils follow from this ever-changing but never-ceasing flood. On the one hand, the layman has perpetuated or strengthened in him the belief in the magical properties, as distinguished from the physiologic effects, of medicines—the faith in drugs as substitutes for right living. Or, as in the development of bacterial therapy and prophylaxis, he has set up a hope, if not a trust, in the use of antibodies in place of efficient public hygiene, e. g., typhoid inoculations instead of pure water and proper sewage; antirabic inoculations instead of proper dog laws, etc., etc. Or, again, if less

credulous, he concludes that the art of medicine has no principles at all, that medicines "are for readiness, and not for propriety" (Bacon).

On the other hand, the physician who follows such methods fails to increase as he should in therapeutic experience and facility. Getting therapeutic knowledge, perhaps, but never therapeutic wisdom, he drifts along, depending more on the statements of salesmen or drummers than he does on those whose interests in drugs are chiefly in their therapeutic effects, and hardly at all on his own observations. Even if observations are carefully made and recorded, the accumulation fails because of the variety of data, as in the case of a physician I know who tried some three dozen creasote preparations in as many cases of consumption in a short time, and was unable to speak confidently of any one.

The making of new preparations and the haste to try them form a vicious circle. Synthetic drugs and mixtures were poured forth in response to the alacrity with which the first ventures in these lines were taken up. As the sick layman grasps at anything in the way of treatment, so many physicians prescribe new and untried drugs, and just as every soldier in Napoleon's armies carried a marshal's baton in his knapsack, so every assistant in a chemical factory dreams of and works for a new synthetic, and many a teacher whose ambition is supposed to be centered on "gathering pebbles on the seashore of science," is working just as hard on some similar scheme. The manufacturers gladly exploit any novelty, expecting the usual profits. The medical profession, as one of the most striking examples of the triumph of Hope over Experience, keeps on accepting the discoveries, repeating over and over the story of disappointment.

The natural tendency to believe everything, not always repressed by training, is skilfully fostered by the resources of the modern advertiser. Exaggeration is inseparable from the enthusiasm of an inventor and discoverer. Had it not been for the unproved assertion, based on perfect good faith, in the complete and permanent protection against smallpox, the use of vaccination would long have been delayed. There is some difference between the sanguine hopes of a discoverer and the studied rhetoric of an advertising expert, but the difference is not easy to see. In the case of proprietary remedies exaggerated claims of excellence at every point, assertions of freedom from the untoward effects inseparable from the action of remedies, insinuations of new properties and suggestions of the imperfection or uselessness of older remedies are all advanced with a skill born of keen competition.

Sometimes the assertions are so absurd that it would seem impossible for any one to pay further attention to the substance advertised, yet experience shows that this is not so. A few years ago a preparation was exploited which was claimed to contain live red blood corpuscles, which latter were alleged to be capable of entering the body of the sick man and restoring it to health. The finding of the philosopher's stone, the realization of perpetual motion, or the existence of Dowie's healing power seem as easy to accept as theorems of Euclid compared with these claims. And yet this product, notwithstanding so disreputable a beginning and a later stage less daring, but just as cloudy, has become, if not the head of the corner, at least part of the basis of many a medical journal. The claims of organic iron preparations, of intestinal antiseptics, cardiac stimulants and antipyretics are almost as bad and do not require further mention.

Unfortunately, in all these claims, the manufacturers are aided by testimonials from physicians, just as dangerous as the testimonials of governors and congressmen that fill certain newspapers. The plain puff is too obvious, and pseudo-scientific articles are published often with great luxury of illustration.

The manager of one of the most iniquitous frauds ever sold once told me with honest pride that his firm never made a statement it did not believe. I was astounded at first, but in looking through the literature I found the claim was literally true. Everything necessary to exploit the material was furnished by physicians. That the information was given gratis may be a mitigating circumstance.

There is another method of furthering the use of new preparations, becoming so widespread as to suggest a conspiracy, though the growth may be merely the result of "mob suggestion." This is the vilification of critics of indiscriminate or irrational drugging. "Who is not for us is against us" seems to be the motto of drug sellers, and just as, sixty years ago, Skoda was called a therapeutic nihilist because he believed that bleeding and tartar emetic were not necessary in the treatment of people with pneumonia, so now any one who does not at once and always prescribe large and numerous doses of drugs is given the same term—and with the obvious intention of making him odious.

What are the remedies for the abuses connected with the sale of proprietary medicines and which I have imperfectly sketched in the preceding lines? To many the prospect seems hopeless. Drugs, like a mighty flood, pour out so rapidly that many are swept off their feet. Yet the situation is neither unique nor hopelessly bad. Sound, temperate Hippocratic medicine has lived through even worse phases. The physician of the sixteenth and seventeenth century had no coal-tar preparations and no sera, but he had more than 3,000 plants in his materia medica, not to mention minerals and animals of all kinds from worms to man, their organs, secretions and excretions. Medicine survived this, the richer by a few remedies of real value, and there seems no reason to fear that oblivion will overcome the less useful of the newer discoveries and permit the good ones to take admitted rank.

How to secure the really valuable new remedies is the problem now before all earnest therapeutists. Repression by force or by enactment can never serve against such a condition. The right to investigate, to discover, if wished for to patent new remedies, need not be curtailed. Authoritative bodies, governmental or otherwise, can do much to assist in determining the status of such products, but the final verdict must come from the great body of practical therapeutists, the physicians in actual charge of sick people. Such a body as the Council on Pharmacy and Chemistry of this Association may perform an important function in making impartial examinations and reports on new substances of obscure composition, but it can not determine whether or not such substances shall be used. The American Pharmacologic Society can also carry on an equally valuable work in making further tests. But no such body can be depended on to disclose all the good things and repress the bad, and just as far as it prevents the development of the spirit of responsibility and of criticism on the part of the physician will it do harm.

Medicine has never been successful when bound down by traditions, schools and authorities. It has only flourished when it made use of every resource that

science or chance could bring—whether the cinchona bark of the savage, the hydrotherapy of the peasant or the synthetic compounds of the university professor—testing all things, holding fast to the good.

I shall take the liberty of discussing briefly some of the solutions for the present abuses.

One of the most general is the exclusion of advertisements of proprietary medicines, at least those of unknown composition, from medical journals. There are some good reasons why this view should receive consideration. A scientific periodical certainly makes a more pleasing impression when it is free from all advertising. In the case of journals of a more practical tendency it is convenient to be able to find advertisements of drugs, books, instruments and other supplies, but even if classified it is difficult to find what is wanted if there is a preponderating number of notices of drugs, mostly unknown. These are particularly exasperating when inserted among the pages of text, as in some of the most reputable English periodicals. On the other hand, merely keeping such advertisements out of journals would not stop the nuisance, for the same matter, or more, would be forced on us in other ways—sample copies, circulars and the like. Nor would the exclusion of such matter from journals be a likely aid to the morals of those who now fall victims to the wiles of the advertiser. In the practice of medicine, virtue that comes only from lack of temptation is as doubtful a quality as in other cases. Moreover, the daily or weekly appearance of an advertisement can not be sufficient reason for any competent person to patronize the thing advertised. Surely the readers of medical journals do not buy every carriage or automobile, or even every book, any more than they buy all the bargains advertised in the daily paper. Medicines, like get-rich-quick schemes, furnish a bait of unusual attraction, but both can be withstood.

It can hardly be expected that physicians will abandon the reading of journals with advertisements of nostrums, but if the goods advertised were not bought the obnoxious pages would soon disappear.

It would seem possible to exclude the most exaggerated or obviously baseless claims, but this is not so easy as might seem at first glance, as the following experience shows: In a recent number of the *Fortschritte der Medizin* there was a brief notice of a preparation loudly advertised in America, with a fling at the "credulous colleagues" in "the land of unbounded possibilities." Yet in the same number of the same journal, as in all the previous numbers, were many advertisements, to me just as bad, including one of a remedy for gout, sciatica, "all rheumatisms," influenza and nervous headaches, the same being also an expectorant useful in putrid bronchitis, typhoid and pneumonia, and a specific for whooping cough, asthma, cardiac neuroses and arteriosclerosis!

A decided gain would come from a freer criticism of all kinds in our medical literature. A fear of frankness seems to bind it all—in abstracts, in book reviews and in editorials. Much of this depends, no doubt, on trade affiliations, but it seems to spread beyond them. I may be permitted to cite an example: A plain and easily controllable investigation of the claims of a widely advertised mud preparation was published in THE JOURNAL of the Association at my instigation. Personal communications and letters from many physicians confirm my idea that the report was one of value. Within a few days after it appeared a circular letter was issued to medical journals, giving a misleading account (though it had been believed by the writer) of the origin of the article, and requesting editors of other journals not to abstract it. The scientific statements in the article were easy to test, and were important, no matter how the article originated. Most of the periodicals, however, followed the wishes of the advertisers and the article was conspicuous by its absence from the abstract columns of the great bulk of journals.

Incidents of this kind, for I am sure the experience mentioned is not unique, indicate one of the greatest obstacles to the freedom of medical science.

Recently a very clear-minded critic of affairs has pointed out the advantages of greater frankness on the part of physicians toward patients. I think most of us agree on this, at least in the case of intelligent patients. But is there not even greater need of frankness among ourselves, and especially of plain speaking, without cant, prejudice or passion, as regards one phase of one of the greatest evils of the day—the nostrum evil?

At best proprietary remedies will continue to be made and advertised, and all sorts of claims will be made for them. We as a profession can not directly stop these things, even if we think it desirable to do so.

We can, however, learn how to use better than we do now well-known remedies and in that way lessen the use of the others. And, although we can not draw a sharp line between unprincipled time-serving or the affectation of ultramodernity, we can at least express our opinion of crude experimentation. We can assume that the physician who depends on the remedies advertised in display type is no more deserving the credit of advanced views than one who should sell his horses or automobile and buy a balloon for making his daily calls. We can look as coolly on new drugs as we do on a new phase of mental healing or a new application of massage. If this were done, production would be less rapid, the vogue of each novelty shorter, the possible virtues of some more quickly determined.

At times, no doubt, some loss would come from this attitude, as it did from the neglect of the revelations of Holmes, Semmelweiss and Lister. Yet there would be compensations. Perhaps the loss of life from the delay of accepting asepsis was not greater than that from the indiscriminate use of coal-tar antipyretics.

How can the profession be brought to a better attitude as regards the present evil? Many think the solution is to be found in more teaching of prescription writing, of lectures on therapeutics. I differ from those who hold this view. What is needed is (1) broader and deeper training in preliminary and biologic branches and the cultivation of exact habits of mind; (2) a more intense study of pathology, not merely to acquire anatomic data, but to learn the actual results and extent of the lesions in common diseases, so that the student may offset speculation with fact; (3) a more intimate study of clinical medicine, that can only come from more prolonged and more personal investigation at the bedside.

In speaking of the evils of the nostrum habit among physicians do we not forget that, although we usually speak of the profession as a whole, the individuals vary enormously in capacity and opportunities for the study of medicine? Doubtless many graduates of hopelessly poor schools become sound and well-informed physicians, and equally doubtless some graduates of great schools fall into utter routinism, but is not the chief

fault the existence of several scores of schools that never have given and never can give proper medical instruction?

To sum up, proprietary medicines are increasing as the result of natural developments. Their abuses spring partly from the exaggeration of legitimate commercial methods, partly from the credulity of the medical profession. The remedy for this part is wholly in ourselves. Let us do all we can to overcome this at least.

THE PHYSICIAN'S RESPONSIBILITY FOR THE NOSTRUM EVIL.*

RICHARD C. CABOT, M.D.
BOSTON.

As physicians we are largely responsible for the sale of secret remedies. We help to create the demand. We feed it.

We feed it because it is shown that 44 per cent. of the prescriptions filled at one of the best of our Back Bay drug stores in Boston call for nostrums—secret remedies of whose constituents we are ignorant.

The conditions are the same or worse elsewhere. The manufacturers and those whose living depends on the sale of these nostrums, have done their best to obscure the issue by vilifying the leaders of the present vigorous crusade against secret nostrums; I mean Dr. Simmons and Dr. Billings. The nostrum makers and a group of medical journals which are their organs, try to deceive us into believing that the great crusade for honest, open, intelligent prescribing and against fraud and ignorance in therapeutics, is all the work of those splendid leaders, Dr. Simmons and Dr. Billings. The truth is that almost every man of mark in the medical profession of the United States has put himself on record within the last year as being in entire accord with the policy of THE JOURNAL of the American Medical Association, and with the quite unanswerable arguments brought forward in this section by Dr. Billings a year ago. The leaders of medicine throughout the country are in accord on this matter and it is time for the rest of us lesser lights to stand up and be counted too. Any one who attacks Dr. Simmons and Dr. Billings attacks every one of the leading men in American medicine to-day. We, their followers, should stand ready to be hit, too, by every missile thrown at them, for the intelligence of the profession is solidly on the side of THE JOURNAL in this matter.

The issue is simply between light and darkness—between ignorance and knowledge. A man should know what he is prescribing and not pour down their patients' throats mixtures of whose ingredients and action he is ignorant. It is not a question of where these nostrums are advertised, or whether or not they are patented, or whether the Pharmacopeia contains or excludes them. The whole question for us is: Shall we be false to the confidence which our patients place in us? Shall we, who should safeguard their interests with the keenest watchfulness, desert our post and permit, nay advise them, to use medicine whose composition is wholly guesswork to us, though our patients trust us to investigate and to understand it?

I do not see how any honorable man can see two sides to this question. Suppose an investor went to his financial adviser for counsel on investments and was recommended to buy a certain stock. Suppose the investor to ask "What is the property? Is it manufacturing stock, railroad stock, mines, municipal enterprises?" Would he not be angry and indignant if his expert adviser should answer: "I don't know what it is. A promoter gave me some and said it was good, but I know nothing about it save what he told me." A pretty sort of adviser, this! False to his trust, surely; but we are far worse than that, for the financial adviser was dealing only with his client's property, while we deal with his life. They juggle with his dollars—we with his vital organs.

I believe there are not many in this audience who are not guilty—as I am guilty—of the sin of having used remedies—some of them dangerous—without knowing what they contained. I have used ammonol, before our Council on Pharmacy and Chemistry showed it up. I supposed (ignorantly, culpably) that it was a synthetic chemical compound, instead of an acetanilid mixture. I am ashamed of it. I shall try to do better, and never again to advise a powerful poison without knowing it, or an inert drug while supposing it, on hearsay evidence, to possess power. But that is just what is advised in 44 per cent. of the prescriptions filled in our Back Bay drug stores. If the public realized this it would be justly angry at our indolence and faithlessness in the high position of trust.

But, I believe that we not only feed the public demand for useless and harmful drugs, but also go far to create that very demand.

Babes are not born with a desire to take a drug for every symptom—they acquire this desire. Who teaches them? You and I do. We educate our patients and their friends to believe that every or almost every symptom and disease can be benefited by a drug. Some ignorant practitioners believe this, and we can not blame them, though we deplore the results of their indiscriminate drugging. But in my experience the educated physician who knows that only a few of his patients can be much benefited by drugs, gives out just as many prescriptions as the ignorant physician who believes all that the Pharmacopeia and the nostrum vendor tell him. The only difference is that the educated physician gives his drugs as placebos. In my opinion, the placebo habit does more harm than the habit of giving drugs to every patient with full faith in their pharmacologic action. But of this I shall say more in a moment. Here what I want to insist on is that so long as the chief visible, tangible, gustable result of a physician's visits is a row of medicine bottles, just so long will the patient tend to try to eliminate the middle man (the doctor) and buy the drugs himself, "patent" or pharmacopeial as the case may be.

If the result of the physician's visits were a reform in the patient's diet, a lengthening of his hours of sleep, better habits in bathing, ventilation and exercise, and a sleeping balcony, no patient would be such a fool as to think he could get these results out of a bottle of "patent medicine" or a box of headache powders; but when the net result of the doctor's expensive visits is medicine bottles, the patient learns his lesson, clings to his bottle, and eliminates the expensive visits. Result: $75,000,000 a year for secret remedies.

Placebos have another bad result. They weaken the confidence of the patient in the physician, because every placebo is a lie, and in the long run the lie is found out. We give a placebo with one meaning; the patient receives it with quite another. We mean him to suppose that the drug acts directly on his body, not through his mind by means of expectant attention. If the patient finds out

* Read in the Section on Practice of Medicine of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

what we are doing he laughs at it or is rightly angry with us. I have seen both the laughter and the anger—at our expense. Placebo giving is quackery. It also fosters the nostrum evil.

The "patent medicine" and nostrum industry will be seriously crippled when we do two things:

(*a*) Stop advising secret remedies which may be poisonous or inert.

(*b*) Stop fooling our patients with placebos.

The positive side of all this negative advice I have tried to explain in another paper.[1]

DISCUSSION.

SYMPOSIUM ON PROPRIETARY MEDICINES.

DR. W. S. THAYER, Baltimore, said he agreed with Dr. Cabot. He related an occurrence in the South when he attended a country medical society and talked on the subject of typhoid fever, telling them what it was, etc. After going over the question of the pathologic conditions involved he told of what one could expect from the methods of treatment and talked very plainly regarding it. He did not know that a well-known drug firm had engaged men to make speeches during a recent campaign, telling of the good of intestinal antiseptics in the treatment of typhoid fever. If the members of that society had had the training that the members of the American Medical Association had, they would have known when that man talked such arrant nonsense. Dr. Thayer said that the better education of the physicians all over the country would do much in the solving of this problem.

There was a point in which he did not agree with Dr. Dock; he could not see the advantage to be gained by admitting the possibility of physicians patenting drugs, etc., for that was not the way for the practicing physician to make money; we should have a higher aim than that. It was a mistake and was likely to lead to more harm than good. The stand should always be taken that the medical profession should not patent or acquire individual rights in the discovery of anything which had to do with the treatment of the diseases which afflicted the human being.

DR. H. A. HARE, Philadelphia, said that he wished to raise his voice in defense of the medical profession, and if he took on himself this defense, he did it because he wished to defend himself as well. He vehemently denied the truth of any statement made that members of the medical profession, particularly of Pennsylvania and of Philadelphia, had deliberately given placebos to patients with the idea of fooling or deluding them. He said he was in accord with the statements made by Dr. Thayer, and against those made by Dr. Dock, in what was said regarding numbers of the medical profession patenting drugs or instruments. In regard to patented remedies which possess therapeutic value he believed physicians should employ them. If they did not they would be depriving themselves and their patients of remedies which the more progressive members of their calling would use. It is a mistake to turn down everything because it is patented. He said he could mention drugs employed by all of them for many years which were patented and which they could not do without, such as phenacetin.

Dr. Hare said that a surgeon could recommend an instrument and name the man who made the instrument and not be criticized for it; but if a physician wrote an article and endorsed a certain drug as being of value, even though he did not mention the name of the maker, he would be under suspicion. Dr. Hare thought there should be a normal balance in this matter and that they should give rational consideration to the therapeutic possibilities of substances presented to them.

DR. S. SOLIS COHEN, Philadelphia, said he wished to emphasize some points that had not been sufficiently brought forward in the papers. Distinction must be clearly made among the various classes of proprietary remedies: 1, "Patent medicines," so called, the nostrums sold to the public through advertisements, usually full of falsehoods, like peruna, the Pinkham medicines and their kind; 2, the nostrums advertised to physicians, the secret or partly secret "proprietary," sold to the public in part directly, in part through the prescription of careless, thoughtless or deluded practitioners, such as antikamnia and its congeners; 3, the proprietary not secret, for example, Squibb's ether or Hayden's creosotal; 4, the drugs patented and therefore not secret, as antipyrin and phenacetin; 5, patented drugs tainted with fraud because not conforming to the description in the patent.

He agreed with Dr. Hare that non-fraudulent patented drugs might be used by physicians without hesitation, but there was some danger that Dr. Hare's words might be misunderstood. When Dr. Hare spoke of using "illegitimate" or "unethical" remedies he might be misconstrued as supporting the use of secret remedies; in other words, nostrums, the drugs and mixtures of which the composition was concealed. This subject was so important and the nostrum manufacturers tried so hard to render the distinction obscure that there must not be left even by inadvertence a loop hole for misconception. Referring to one speaker's *peccavi* or rather *peccabat*, Dr. Cohen did not understand how any intelligent physician could wittingly order a medicine the composition of which he did not know, but that such a mistake was in this instance honestly made did not justify an indiscriminate denunciation of all other drug-giving. What is needed is intelligent use of drugs, that is to say, the use of known drugs, under suitable conditions. Should they abandon opium or digitalis because some one may use them unnecessarily? One great fault of secret remedies is that there is no guarantee of their uniformity. The composition of "patent medicine" and other nostrums might be changed day by day and has been changed materially in well-attested instances, as shown by careful analyses. One who prescribes antikamnia, for example, has no means of knowing whether it will be the same thing or something else to-morrow.

Dr. Dock's proposition for physicians to take out patents on remedies is an unthinkable method. The cure is worse than the disease. While we might yield to necessity and as he—Dr. Cohen—had already conceded, prescribe drugs of known composition patented by their makers, yet we should not encourage such a lowering of the traditional standards of the medical profession itself. It was to be regretted that they had not taken a decided stand, as indeed he, among others, had urged at the time, and refused to prescribe patented drugs when Knorr's antipyrin was first put on the market. The general issue would have been fought out then and there, and science and humanity would have won. Nothing would have been lost to therapeutics even had the introduction of antipyrin into clinical use been long delayed. Indeed, the temptation to exploit the drug for gain would have been removed, it would not have been so widely and wildly advertised or so much imitated, and perhaps thousands and tens of thousands of lives would have been spared that were lost through its use and that of other coal-tar antipyretics in typhoid fever, pneumonia, and especially influenza. The true sphere of usefulness and, above all, the limitations of the new drugs would have been well defined. Nothing would have been lost, and much would have been gained. It is too late to return to the *status quo ante*, but they can at least preserve what is left of the traditional heritage of the physician.

DR. WOODS HUTCHINSON, Redlands, Cal., asked that they all look at that medical barbarism, the United States Pharmacopeia, and the enormous lists of things that had been published. Anyone looking over those lists must have been struck with the great number of drugs that have been retained, and it is the fault of the profession that such a large number was retained. The remedy lies in our hands. At least one-half the pages should be cut out; instead, somewhere in the neighborhood of 1,500 or 2,000 remedies had been added. He believed the Pharmacopeia should be revised.

DR. ALBERT FRANCINE, Philadelphia, said that he thought it was worth while to review briefly what had been accomplished by the agitation during the past few years against nostrums and proprietary medicines in relation to the general public, to the accomplishment of legislation and to the profession itself. He said that the education of the public had proceeded rapidly

1. "The Renaissance of Therapeutics," THE JOURNAL, June 2, 1906.

and that they were becoming fully alive to the dangerous character of these mixtures. This was shown practically in the fact that the sale of "patent medicines" had decreased enormously throughout the country; and was also reflected in the public press, which now published frequent accounts of poisoning from headache powders and other nostrums, recognizing that the public was interested.

Success had not been so marked in regard to getting the enactment of legislation. He wished that every state could accomplish the legislation which Massachusetts had just inaugurated, by which cocain could be sold only on a doctor's prescription and could not be an ingredient of any copyright mixture whatsoever; morphin could be present only in the proportion of one-fourth gr. to the ounce of solution; and alcohol could be used only in sufficient quantity to act as a solvent. This was certainly a long step in the right direction, and must, if enforced, be the death blow to the alcoholic nostrums and to many others containing cocain and morphin.

The most interesting and difficult phase of the subject and the field for their most legitimate efforts, was in the relation of the profession to proprietary medicines. Their use by physicians appeared to be increasing rather than diminishing. This arose from two things, carelessness and ignorance. Credit must be given to the manufacturing chemist for putting out very elegant mixtures, some of them with the formula on the bottle, and for the temptation thus held out to use them. But as Dr Billings had well said: "To the rational physician, mixtures even with a known formula are objectionable, for disease is never quite the same in different individuals and never quite the same in its different stages." Dr. Francine thought that too many members of the profession did not appreciate their responsibilities in this regard. He thought that the medical schools did not do their full duty in training their graduates in the arts of pharmacology and therapeutics, and in prescription writing. Graduates did not know how to write prescriptions, how skillfully to combine drugs, and did not, as a rule, subsequently familiarize themselves with them. Every graduate, even after a term of service in a large hospital, should diligently apply himself to this study, and it was because this was not generally done that they fell back on ready-made preparations. He thought there was justification for criticism of the usual methods of teaching therapeutics in the medical schools, though this phase of it was a difficult problem for the latter to handle or adjust properly. The physiologic action of drugs and prescription writing should be taught in close relation to their clinical application. It seemed folly to teach the use and action of the nitrites to second and third-year students, when they had little or no familiarity with the diseases in which they were indicated, and yet this was the usual course. It would seem wise, if the physiologic action of drugs must be taught at that time to supplement such theoretical teaching by practical work in prescription writing and prescribing in the fourth year directly to clinical cases in the wards and dispensaries.

DR. LOUIS LEROY, Nashville, Tenn., said that the speakers were laying all of the trouble, or most of it, at the door of the practicing physician, as if he could revolutionize public opinion. He said that he had found that the attitude of the public man now was about reflected by the attitude of the medical man of some one hundred years ago; it took one hundred years to come to the attitude and it probably would take another hundred years to come to the attitude of the medical men of to-day. While they might take some decided step, he felt only moderately sanguine over diminishing to any marked extent the public use of nostrums. Another thing he said should be borne in mind: the medical student came to them in the mental attitude of the general public and in that student they must build up this work. A great thing that had been lacking so long in medical schools was common "horse sense," as well as the ability to correlate what they got. Some of this could be cultivated to a certain extent, although some never would, and some never could. He said they were at fault in medical teaching, in that they did not teach medical students how to put two and two together.

DR. RICHARD C. CABOT, Boston, in answer to what was said regarding placebos, said that he would charge no man with what he had not done himself and that he had given bushels of placebos, as all doctors do, to impress the patient. But when they gave placebos they were in precisely the same attitude as the quack. They were pretending to possess remedies and powers which, in fact, they did not possess. Dr. Cabot added that placebos were lies, because if they explained to the patient that they were inert and given solely to influence his symptoms through his mind, they would then be useless. It was only when they led the patient mistakenly to suppose that these inert drugs had genuine medicinal action, that they work on his mind. They should all do as Grover Cleveland, at the last annual meeting of the Medical Society of the State of New York, entreated them to do, namely, treat their patients like intelligent human beings; be open with them, be fair with them, treat them as they would want to be treated if they were sick.

DR. GEORGE DOCK, Ann Arbor, Mich., said that he would limit his remarks to the question of patients. He was prepared for the objections made against the patenting of medical inventions, and, in fact, expected even greater objections. He had at one time shared the views so clearly stated by Dr. Thayer. He thought that conditions had somewhat changed and that the objection to the patenting or dispensing of a secret preparation could not apply to the patenting of a discovery or invention of a new principle. A good deal has been said about the fact that Jenner did not take out a patent on vaccination. It would have been a great deal better for vaccination if Jenner had. He himself complained of the harm that was done by careless and ignorant vaccinators. If he had been able to control the standard of vaccine and the method of vaccinating for a few years, the result might have been very much better. A patent made the material public, or open, so far as its composition was concerned. He thought it was unfortunate that in this country they were able to patent the product. It would be very much better if the right were limited to patenting the process. Invention would be stimulated in still further perfecting the product. If a physician did not wish to take money derived from the patent of an invention it would be an easy thing to forego his royalties. On the other hand, if it is wrong to take out a patent on a remedial agent it would seem to be equally wrong to use the patented article. Dr. Dock said that he had not used ammonol, but confessed to having used Behring's antitoxin, adrenalin and modified milk, all of which he was informed were patented. He did not believe that these would have been any worse if patents had been held by physicians.

CIRRHOTIC CHANGES IN THE LIVER FOLLOWING A SINGLE INJURY.*

W. G. MacCALLUM, M.D.
Associate Professor of Pathology, Johns Hopkins University
BALTIMORE.

It is well known that various poisonous materials circulating in the blood may cause the destruction of the cells of the liver, sometimes in very small foci, sometimes much more diffusely throughout the whole organ. In many cases, as has been emphasized by Opie, this destruction may occur fairly regularly in certain portions or zones of the lobule, while in other cases it is difficult to determine any such regularity.

Necroses of similar type may be produced experimentally, as shown by Pearce and others, but they most commonly occur in the course of acute infections and intoxications. When limited in extent they may destroy so little of the liver that no definite symptoms result and the injured area is in time replaced by scar tissue, the remaining liver tissue becoming hypertrophied to

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

compensate for that which was lost. This process may become a more or less continuous one if the source of the poison persists, and the final result of such repeated injuries and healings is one or other of the varieties of cirrhosis of the liver. The changes involved in this I have discussed in detail in a previous paper.[1]

When the injury to the liver tissue is very extensive and involves at one time the greater part of the liver, symptoms at once arise, and such a condition which is commonly classed as acute yellow atrophy may quickly bring about the death of the patient. Recovery sometimes occurs, and the reparatory changes in the liver in such cases have been minutely studied. One case of this kind was reported in detail,[2] and since that time another case has come to my notice. This second case was that of a child who died of peritonitis following appendicitis, but who had otherwise always been well except for an attack of scarlet fever some months before. At autopsy the liver was found to be extraordinarily distorted by the presence of large prominent nodules of grayish, swollen-looking liver substance, each surrounding a central branch of the portal vein. Between these masses the tissue was shrunken and fibrous and dark grayish red in color. Microscopically there were found conditions entirely analogous to those described in the published case, i. e., in many areas the collapsed scarred framework of the liver with proliferating sprouts from the bile ducts; in other places the greatly enlarged liver lobules which had resulted from the hypertrophy of those lobules which remained uninjured.

The aim of this note is merely to show what must be almost obvious, that there may occur a scarred condition of the liver perhaps intermediate between the ordinary cirrhosis and the extraordinary distortion just described, a condition, in other words, in which some single attack of an infectious disease or some single intoxication has produced a single non-progressive, though widespread, injury from which complete and permanent recovery has occurred.

Such livers present, in general, a smooth, even surface, interrupted only by a network of fine linear grooves, which are also seen on section and which indicate the places where destruction of the liver cells took place. The remaining tissue in two cases which we have studied was composed of lobules perfectly normal in form, but rather larger than the normal. Microscopically, but little proliferative change in the bile ducts are to be observed, and it appeared, indeed, that in these cases but little definite scar tissue had appeared, the depressed lines being composed of atrophic and collapsed liver tissue in which the blood capillaries were separated by scale-like remains of liver cells only.

Similar conditions have been observed in a case of pernicious anemia and in a case of myelocytic leukemia in which the livers were found to present, evidently as the result of a single injury, ramifying bands and lines in which the epithelial cells had been destroyed so that the framework of the tissue had collapsed into a red, vascular, spongy substance, while the remaining uninjured liver tissue stood out prominently in the form of opaque, yellowish-gray masses, with normal or somewhat enlarged lobulations.

These are rather extreme cases, but there are many cases in which, although no symptoms referable to the liver were noted during life, the autopsy revealed a liver practically normal, except for the presence of irregular, fine lines of scar tissue throughout its substance. These are commonly recognized as cases of incipient cirrhosis, and, indeed, it can not be denied that they are cases of cirrhosis, but we have no evidence whatever that the condition is part of a progressive process. From the normal state of most of the liver tissue it seems far more probable that we are dealing, not with the beginning of an advancing cirrhosis of the liver, but rather with a finished or stationary condition which has existed unchanged, since the injuries to the liver produced in the course of an attack of some infectious disease in earlier life were permanently healed. In other words, the condition differs from ordinary cirrhosis merely in not being progressive and in representing only the scars of an old injury.

1. MacCallum: "Regenerative Changes in Cirrhosis of the Liver," THE JOURNAL A. M. A., Sept. 3, 1904.
2. Johns Hopkins Hospital Reports, vol. x.

DISCUSSION.

DR. W. OPHÜLS, San Francisco, believed with Dr. MacCallum that the importance of the regenerative and reparatory changes taking place in cirrhosis can not very well be exaggerated, but he would not go so far in giving the interstitial changes an entirely secondary position. His contention is based very largely on some experiments which he has been doing on chronic nephritis. For his experiments he used guinea-pigs and dogs, feeding them certain well-known poisonous substances which affect the kidneys, and the specimens show that, although there are degenerative changes with the interstitial processes which were observed, they are hardly marked enough to be regarded as primary, nor is there any direct local relation between the two, the degenerative changes being diffuse in character and the inflammatory changes being localized in certain parts. It is certainly true that in these chronic inflammations degenerative and reparatory changes in the epithelium play a very important rôle in the production of the anatomic picture.

DR. HENRY A. CHRISTIAN, Boston, asked Dr. MacCallum what in these lesions he considered the possible determining feature of the attack on the periphery of the lobule in the light of the fact that most acute conditions attack the center of the lobule. Such, at least, had been the distribution of acute necroses in his cases. He also asked what Dr. MacCallum thought about the endothelial type of cell which appears, that is, the cell which morphologically resembles an endothelial cell; whether he regards such cells as true endothelial cells.

DR. MACCALLUM said that he was convinced that the only instance of primary trouble is of the highly organized tissues. He can not make clear himself any constricting effect on the liver tissue. In regard to Dr. Christian's remarks, he thought that necrosis of the liver is different in arrangement at Baltimore from what it is in Boston. He has been struck by the relative rarity of the central lesions. As to Dr. Christian's second question, he does not regard these as endothelial cells or that they go to the formation of any blood vessels.

DR. HENRY A. CHRISTIAN, Boston, agreed that what Dr. MacCallum said about the difference between Boston and Baltimore is true. This was brought out when Dr. Opie read his paper in Washington on "Zonal Necroses of the Liver." Dr. Christian said that he felt rather badly because he thought that this condition might have been overlooked in Boston, but he came back and went over something like 2,000 cases and found only central necroses. He can not explain why this difference exists. The types of cirrhosis in Baltimore and Boston are practically the same.

Electric Signal for Wet Diapers.—We learn from an exchange that the Exhibition of Hygiene recently held at Vienna contained a practical device, the invention of Professor Pfaundler, to aid in the care of infants. It is an electric contrivance with dry elements and a small wire pad. The latter is placed in the child's diaper. As soon as the diaper becomes wet the circuit is closed and an electric bell rings until dry conditions are restored.

A PLEA FOR MORE RADICAL OPERATIONS IN CANCER OF THE LIPS AND TONGUE.*

D. N. EISENDRATH, M.D.
CHICAGO.

The decreased number of recurrences after a thorough removal of the breast according to the method of Halsted and others has taught us that the same principles could be applied in the surgical treatment of carcinomata elsewhere in the body. In no class of cases does this seem more promising than in carcinomata of the more superficial character like those of the face, tongue, lips, ear, etc.

MODE OF GROWTH OF SQUAMOUS-CELLED CARCINOMATA.

Carcinomata of the lips, tongue, ear, etc., all belong to the flat or squamous-celled type. They spread almost exclusively either by continuity of tissue or along the lymphatic spaces and vessels to the lymph nodes which normally drain the region involved. Metastatic growths in the internal viscera or long bones are very rare in the squamous-celled type of carcinoma.

von Winiwarter and Landau were unable to find internal metastases in a large number of cases examined by them. Küttner[1] found only four in which there were such deposits in a number of cases of cancer of the tongue reported from nine German university clinics.

These data confirm the frequently observed clinical fact that recurrence of carcinoma of the lips, tongue, etc., usually takes place close to the original seat of operation or in the adjacent lymph nodes. Such a local or regional recurrence usually manifests itself from one to three years after operation; but cases have been reported in which they did not appear for eight or ten years. The latter are a rare exception.

Fig. 1.—Anterior view of lymphatic drainage of tongue; *a*, lymphatics of sides of tongue and floor of mouth; *b*, cut surface of jaw divided in the median line; *c*, submaxillary lymph node; *d*, lymph nodes in geniohyoid muscle; *e*, deep cervical node along the internal jugular vein; *f*, internal jugular vein; *g*, omohyoid muscle.

There are but few reliable statistics which will aid us in judging of the percentage of permanent recovery after the older and less radical operations for removal of the class of carcinomata of which this paper treats. The chief reason for this is the great difficulty in following the cases for a long period. Küttner was able to collect 162 cases from nine hospitals in which the non-radical operation had been performed for cancer of the tongue and found only 13 per cent. of permanent recoveries.

There is no form of carcinoma in which involvement of the lymph nodes draining the area involved takes place as early as in carcinoma of the tongue, lips, etc. It is for this reason that operations for the radical removal of all infected territory seem to offer such favorable opportunities for permanent cures.

LYMPH NODES WHICH DRAIN THE LIPS, TONGUE, FACE AND EARS.

These have been carefully investigated by Sappey, Küttner,[1] Polya,[2] Poirier[3] and others and can be best understood by a reference to Figures 1, 2 and 3. They are as follows:

1. For the Tongue (*Fig. 1*).—Submaxillary lymph nodes receive lymph from the edge, lower surface and middle of dorsum of tongue and entire floor of mouth. Superior and inferior deep cervical nodes drain entire tongue and floor of mouth. In addition to these there are some intramuscular nodes situated in the geniohyoid muscles, and at times retrograde lymph currents may involve the parotid nodes. There is much intercommunication of lymphatics so that a carcinoma involving only one side of the tongue may invade the lymph nodes of both sides of the neck. The most important node is situated at the bifurcation of the common carotid arteries. This node lies deep beneath the posterior belly of the digastric muscle. In order thoroughly to remove the deep nodes which drain the tongue, it is also necessary to excise the lower part of the parotid salivary gland.

2. For the Lips (*Fig. 2.*)—The chief lymph nodes which drain the lips are situated in the submental and submaxillary regions. Occasionally infection of one of the deep cervical nodes will take place at an early period. The submental lymph nodes draining the lips are situated just beneath the skin between the two anterior bellies of the digastric muscles. The submaxillary nodes lie embedded in the subcutaneous fat of this region in close relation to the capsule of the submaxillary salivary

*Read at the annual meeting of the Illinois State Medical Society, May 16, 1906.

1. Küttner: Beitr., z. Klin. Chir., vol. xxi.
2. Polya: Deutsch. Ztschr. f. Chir., vol. lxv.
3. Poirier, Cuneo and Lamere: "The Lymphatics."

gland. They are at times found within the latter so that it is always safer to remove the submaxillary salivary gland itself.

Involvement of the deep cervical nodes does not take place until a later period of the primary growth, but in a radical operation, even at an early stage, the possibility of their involvement must be borne in mind.

3. For the Ear (*Fig. 3*).—The lymph nodes draining the external ear are chiefly the deep cervical, although at times the parotid and mastoid nodes may be first affected.

4. For the Nose, Face and Cheeks.—The lymphatic drainage of the nose, face and cheeks is chiefly into the submental and submaxillary nodes and from these into the deep cervical at a comparatively late period of the development of the primary growth. The lymph from the lateral portion of the face drains into the parotid nodes situated on, within and beneath the capsule of the parotid salivary gland.

One can not in general rely on any one set of nodes being affected, but must remove all of them in order to

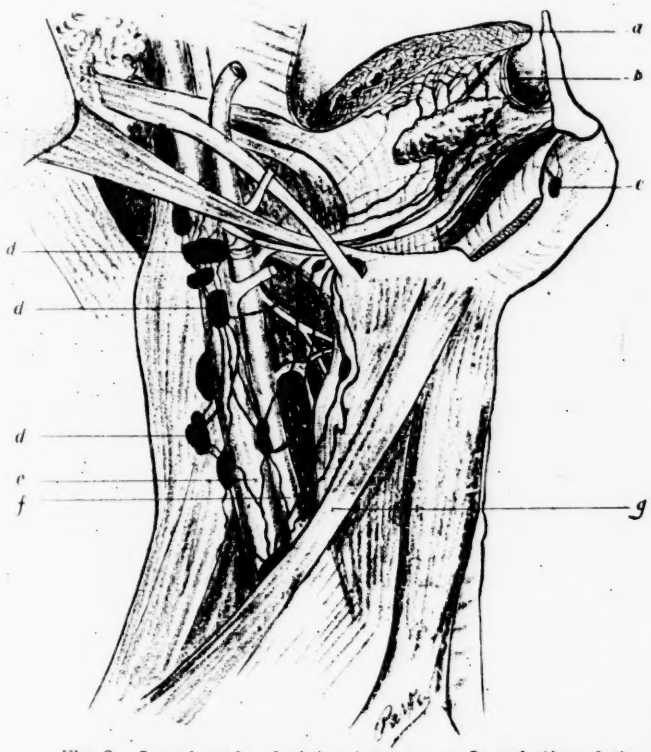


Fig. 2.—Lymph nodes draining tongue: *a*, Lymphatics of tip of the tongue; *b*, lymphatic trunks of sides of tongue and floor of mouth, draining into *c*, submaxillary and submental nodes, and into *d*, deep cervical nodes; *e*, internal jugular vein; *f*, common carotid artery; *g*, omohyoid muscle.

be thorough. One should not depend on external palpation for enlarged lymph nodes before undertaking a radical operation. Such enlargement may be simply inflammatory or there may be a number of deep nodes which are not palpable.

HISTORY OF OPERATION.

Before beginning the description of the methods I will refer briefly to the development of this tendency toward more radical operations in this class of carcinomata.

The majority of the articles have appeared during the past eight years. The first surgeon to advocate thorough removal of all lymphatic nodes was Butlin.[4] In a paper published in 1898, he stated that he had employed the method since 1895, in a more or less systematic manner, for cancer of the tongue. Since 1898 a number of articles have appeared advocating the same procedure for cancer of the tongue, lips, etc. Among these may be mentioned those of Crile, Küttner,[1] Polya,[2] Stewart,[5] Cheyne,[6] Stieda,[7] Ebel,[8] Boyd and Unwin[9] and Whitehead.[10]

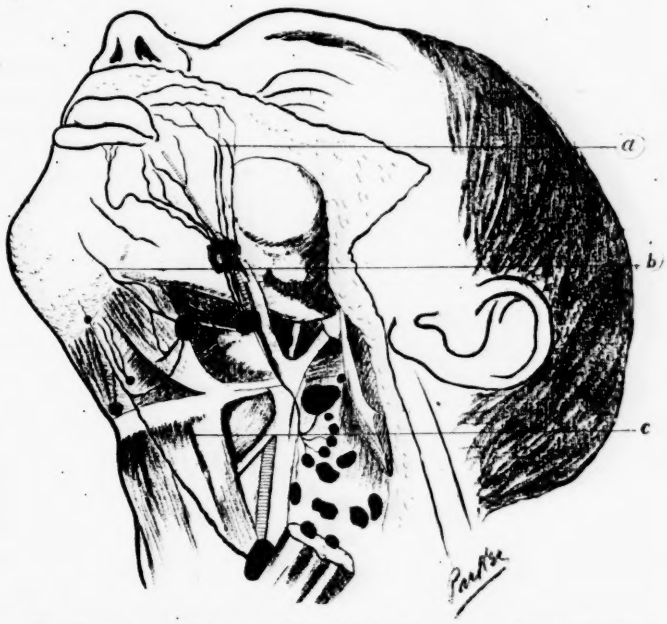


Fig. 3.—Lymph nodes draining cheeks and lips: *a*, Lymph nodes of cheek; *b*, lymph nodes of lower lip and chin region draining into submaxillary and submental glands; *c*, deep cervical nodes.

Fig. 4.—Lymph nodes draining ear (Poirier); *a*, Lymphatic trunks of auricle; *b*, mastoid, *c*, *d*, *e*, and *f*, deep cervical nodes.

Unfortunately there are but few statistics up to the present time which will enable one to form an opinion as to what extent these more radical operations have less-

4. Butlin: Brit. Med. Jour., vol. i, 1898, and vol. i, 1905.

5. J. C. Stewart: St. Paul Med. Jour., vol. vi, 1904.
6. Cheyne: Practitioner, April, 1899.
7. Stieda: Archiv. f. Klin. Chir., vol. lxiii.
8. Ebel: Beitr. z. Klin. Chir., vol. xl.
9. Boyd and Unwin: Practitioner, May, 1903.
10. Whitehead, W.: Practitioner, May, 1903.

ened the percentage of recurrence. As in the case of the development of the same mode of operation in cancers of the breast, it will be necessary to collect a large number of cases and await a considerable time after operation before we can judge of the value of the same principle as applied to cancers of the lips, tongue, etc. It would seem as though a period of at least three years should elapse before results could be fairly judged.

Butlin[4] began to perform the operation for the complete removal of the contents of the anterior triangle of the neck in December, 1895, or January, 1896. Between that period and December, 1901, there were 28 of these operations, and, in a paper published in 1905, he says: "I will merely take the number of persons who died of affection of the gland without recurrence in the mouth and the number of successful cases, that is, of persons who were alive and well three or more years after the operation, or who died of some other disease than cancer more than three years after the operation. There were 28 cases of removal of the contents of the anterior triangle of the neck from January, 1896, to December, 1901; 4 patients died of affection of glands without recurrence in the mouth; successful cases, 10.

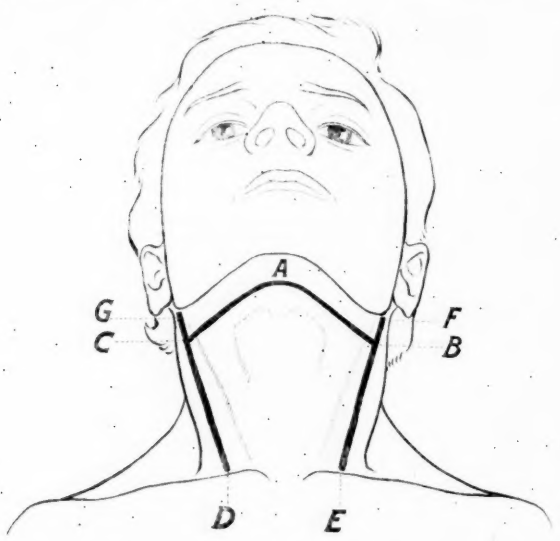


Fig. 5.—Incision employed in extirpation of lymph nodes in carcinoma of the lips, tongue, etc. C, A, B, transverse incision parallel to lower border of lower jaw, and midway between upper border of thyroid and lower jaw for extirpation of submaxillary and submental glands; G, C, D and F, B, E, incisions over middle of sternocleidomastoid muscles to permit extirpation of deep cervical nodes, with or without the removal of the sternocleidomastoid and internal jugular vein. The nodes in the supraclavicular region may be removed by an incision parallel to the upper border of the clavicle, carried outwards from D or E respectively.

Compare with these the results of the old operation, in which the glands which could be felt to be enlarged were taken out, but no more than this was done. Up to January, 1896, I performed this operation 31 times. Of these 31 cases of removal of enlarged glands before January, 1896, 8 patients died of affection of glands without recurrence in the mouth; successful cases, 5.

Again, take another series of cases to compare with the first series. Between January, 1896, and December, 1901, Butlin operated on 34 patients for the removal of cancer of the tongue without removal of the glands of the neck. Of these 34 cases 9 patients died of affection of the glands without recurrence in the mouth; successful ones, 9."

It will be seen at a glance that by far the most successful results are those which were procured by the removal of the contents of the anterior triangle. But the mere statement of numbers does not tell anything. Allowance has been made for certain conditions which were present or which were absent in each of these three series of cases. In the first series of cases, there were 18 patients in whom the glands were perceptible to touch at the time they were removed, 7 in whom they were not perceptible, and 3 of whom there was no note on this important point. By far the best results were obtained in the 7 cases in which the glands were not perceptible to touch. For 4 of these patients are among the 10 successful cases. Of course, in the second series the glands were perceptible in every one of the 31 patients, and that was why they were removed. So far from thinking the results bad, he was surprised to find they were so good. For it is a remarkable circumstance that five persons, under such conditions, should have been cured by so incomplete an operation. In more than 1 of these 5 cases the glands were proved by microscopic examination to contain epithelioma. Yet one of these patients was alive and well nearly twenty years after the operation.

Probably no corrections are required in the third series of 34 cases. For if, on the one hand, it may be said that these 34 cases comprise the lightest and most favorable of all the cases (which is, of course, true), there were, on the other hand, some of them in which the glands were not removed, because they were beyond reach of removal, and the operation on the tongue was merely palliative.

In 1903 I began to employ the radical removal of the lymphatic nodes and surrounding tissues in the submaxillary triangle and along the internal jugular vein as a routine procedure in cancer of the lips, tongue, ear and face. The number of cases is still too small and the time which has elapsed too short to render a publication of results advisable at the present time, so that the present article is intended more as a preliminary communication to call the attention of the profession to a much-needed change in our surgical treatment of these more superficially situated carcinomata.

The method employed at the present time by the majority of surgeons varies chiefly, *a*, as to the incision; *b*, as to the amount of tissue to be removed; *c*, as to whether the operation shall be performed at one or two sittings. It is necessary to divide the cases into two classes: first, those in which the case is seen by the surgeon at a comparatively early stage of the lymph node involvement; second, those seen at a later period when the secondary growths are very extensive. For the former the first method of operation to be described is to be employed; for the more advanced cases the methods recommended by Crile, Butlin[4] and others are to be used.

TECHNIC FOR LESS ADVANCED CASES.

1. Removal of Primary Growth.—In cancers of the lips and tongue the amount to be removed varies, of course, with the extent of the lesion. As a general rule, one should never be content with excising at least a half inch of healthy tissue on each side of the growth. In cancer of the tongue which extends beyond the median line, it is better to remove the entire organ, since the lymphatics of both sides of the neck are probably involved. Whether the tongue shall be removed, *a*, through the mouth after the method of Whitehead; or, *b*, through an incision parallel to the lower jaw, i. e., from below, combined with temporary resection of the jaw, is a matter of individual preference. The majority of surgeons both in this country and abroad prefer the Kocher

method, i. e., from below the jaw. It can be readily combined with radical removal of infected lymphatic tissue, or combined with ligation of the external carotid artery to be referred to below.

Temporary resection of the lower jaw in the median line after the method of Langenbeck adds greatly to the exposure of the operative field.

2. Removal of Infected Lymphatic Nodes.—In the majority of cases cancer of the lips, tongue, ear, face and cheek, the incisions shown in Figures 5 and 7 will suffice. I have used them since 1903 and they give excellent access to every part of the neck. In cases of cancer of the lips only the first portion need be employed; viz., C, A, B (Fig. 5). This consists of an incision through the skin and subcutaneous fat extending parallel to the lower jaw and midway between the lower border of the latter and the upper border of the thyroid cartilage from the sternocleidomastoid muscle on one side of the neck to the same structure on the opposite side.

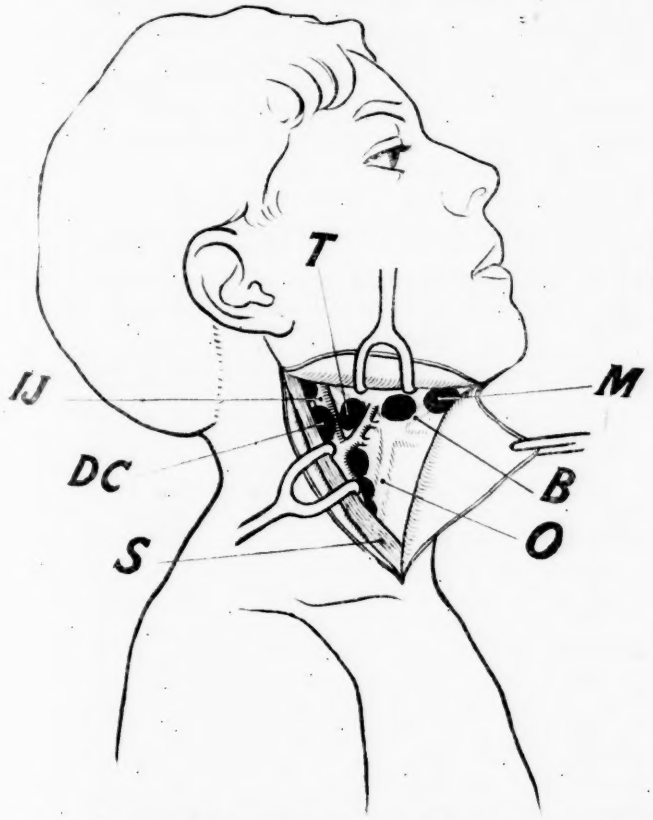


Fig. 6.—Location of most frequently affected lymph nodes in carcinoma of the tongue: M, submaxillary nodes; T, deep cervical node lying between internal and anterior jugular veins; D, C, deep cervical nodes lying in front and behind internal jugular vein; S, sternocleidomastoid muscle, retracted so as to show the deep cervical nodes in the upper half of the neck; I, J, internal jugular vein; O, omohyoid muscle; B, anterior belly of digastric.

The flaps are retracted and all of the following tissues removed in submental region and the submaxillary triangles on both sides of the neck: subcutaneous fat, submaxillary and submental lymph nodes, submaxillary salivary glands and all veins, large or small.

In cases of cancer of the tongue the removal of lymphatic nodes, etc., should not only include the contents of the submaxillary region, but the additional incisions (G,C,D and F,B,E), shown in Figures 5, 6, and 7 should be made. These permit free exposure of the lymph nodes lying along the internal and anterior jugular veins beneath the sternocleidomastoid muscles on both sides of the neck and many lymph nodes between the sternocleidomastoid muscle and the muscles of the larynx and at the bifurcation of the common carotid.

If the sternomastoid or the omohyoid be involved, they should be removed, since their extirpation does not interfere greatly with the movements of the head. Similarly if the nodes are adherent to the internal jugular it is best to resect a portion of this vessel. No operation should be considered complete without a thorough removal (through the incisions made over the middle of the sternocleidomastoid muscle) of the deep cervical nodes along the internal jugular. The exposure of the supraclavicular fossæ on each side through an incision parallel to the upper portion of the clavicle (Fig. 6) permits an inspection of the lymphatics in this region and removal of the abundant fatty tissue and infected lymphatics. In cases of cancer of the tongue there are two other places in which search should always be made for infected lymph nodes. These are on and within the parotid capsule.

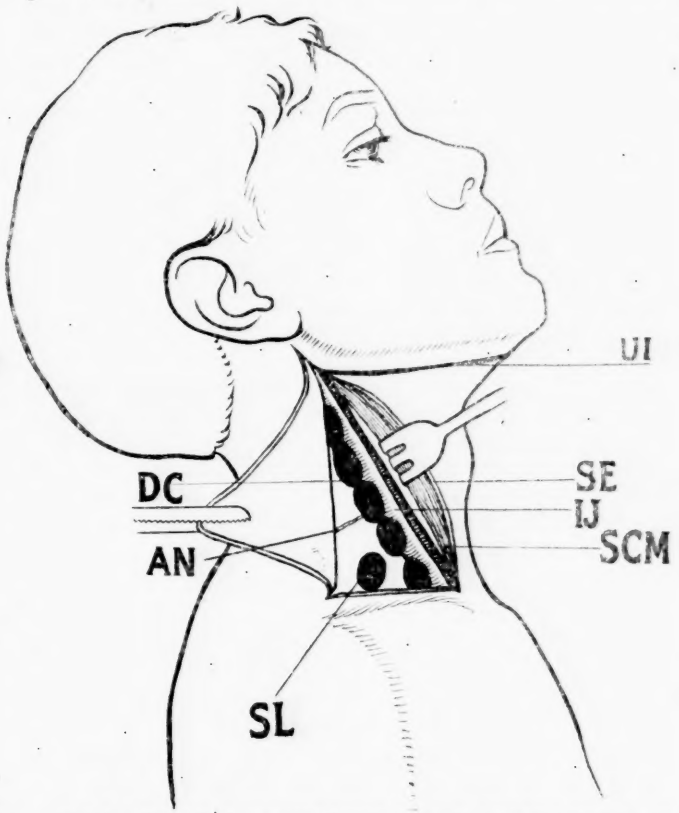


Fig. 7.—Method of removing lymph nodes in posterior triangle of neck, and those adherent to posterior aspect of internal jugular vein without resection of the sternocleidomastoid muscle: U, I, incision through which the submaxillary and submental glands have been removed; S, E, skin edge; I, J, internal jugular vein; S, C, M, sternocleidomastoid muscle pulled forward; S, L, supraclavicular nodes; A, N, spinal accessory nerve; D, C, deep cervical of internal jugular nodes.

3. Hemostasis.—Hemostasis in operations for extirpation of cancer of the lips and of the lymphatic nodes in the submaxillary region is a much simpler problem than in the case of an operation for cancer of the tongue. In the latter the question depends again on whether the organ is removed through the mouth or from below by Kocher's method. In the latter case the incisions described above for the removal of lymphatics greatly facilitate the ligation of the lingual or even of the external carotid arteries. There is, of course, some danger of cerebral embolism following the ligation of

the external or common carotid. Mortality from this cause is estimated by Crile usually at from 1 to 2 per cent., but at the time of life at which cancer is likely to develop the danger of embolism from this cause increases to from 20 to 30 per cent. A ligation of the lingual arteries through the neck incision before removing the tongue is especially to be recommended as greatly decreasing the amount of hemorrhage and not being followed by embolism. In general it may be said that every vessel should be caught with artery forceps and ligated lest they reopen after the clots become dislodged.

Every precaution should be taken to avoid infecting the field of operation either from the primary growth or through careless removal of carcinomatous lymph nodes. The primary focus should be cauterized, if possible, and great care taken not to open the lymph nodes during their removal.

4. Mode of Anesthesia, Posture, Etc.—The mode of anesthesia varies according to whether or not a preliminary tracheotomy has been performed. If the latter has been done, the anesthetic is given through the canula in the trachea. If no tracheotomy has been performed one can use the method of Crile, viz., inserting a rubber tube through each nostril extending to the level of the epiglottis, or the anesthetic can be administered through the nostrils after being poured on a sponge or pumped through a rubber tube inserted just beyond the external nares with the aid of the modified Brophy apparatus. Chloroform should be given preference on account of the greatly increased amount of salivary secretion after the use of ether. The hypodermic administration of ¼ gr. morphin 15 minutes before beginning the operation greatly decreases the amount of anesthetic used.

The best position for thorough removal of the tongue with removal of the lymphatics is with a sand bag under the shoulders and the head thrown well back. Whitehead prefers a sitting posture. In operation on the lips the primary growth can be excised with the head elevated, and then the latter can be lowered to permit removal of the lymph nodes.

TECHNIC IN ADVANCED CASES.

This has been so well described by Crile in a number of recent articles that it will be necessary to refer only briefly to it here.

In these advanced cases Crile closes the common carotids temporarily by means of a clamp and then proceeds to remove from below upward all of the soft tissues, including the lymph nodes themselves, the sternocleidomastoid muscles, the internal jugular vein, fat, etc. It is remarkable how little general or local disturbance such radical procedures cause. Whitehead mentions having excised portions of the common carotids in two cases.

SHALL THE OPERATION BE PERFORMED IN ONE OR TWO SITTINGS?

The question arises in these radical operations whether both the primary growth and the lymphatics shall be removed at one sitting. The answer is that it depends, *a*, on the general condition of the patient; *b*, on the extent of involvement; *c*, on the skill and experience of the operator in this class of cases.

In cancer of the lips both operations can usually be performed at one sitting. In cancer of the tongue there should be only one sitting unless the patient's condition is such as to permit of an operation requiring in the most experienced hands from 1 to 1½ hours. The shock from these operations is, as a rule, very slight, so that, if possible, both had better be performed at the same time.

Boyd and Unwin[9] have called attention to a very important fact, viz., that if the tongue growth is removed at the first sitting and then the lymphatics taken out 1 to 2 weeks later an increased lymph stream follows and the tumor cells are more widely diffused. They advise, if the operation is to be performed in two steps, to remove the glands first and the tongue a week later.

It may be said in general that, with the exception of very old or weak patients, there are many advantages in performing both operations at one sitting, especially if the Kocher method of removing the tongue be employed. Butlin[4] performs the operation on the tongue first. The removal of lymphatics is done as soon as the patient is able to take food by mouth, i. e., liquid food enough to enable him to fight through the second operation.

My own method has been to perform both operations for cancer of the lips, face and ears at the same sitting. In cancer of the tongue I have carried out both at the same sitting in fairly robust patients without much glandular involvement. If the latter is extensive it is better to follow the plan of Butlin just mentioned.

103 State Street.

THE RADICAL CURE OF ANEURISM.

PRESENT STATUS OF THE METHOD OF INTRASACCULAR SUTURE, OR ENDOANEURISMORRHAPHY.*

RUDOLPH MATAS, M.D.

Professor of Surgery, Medical Department Tulane University, Louisiana.

NEW ORLEANS.

SYNOPSIS.

The term, endoaneurismorraphy, meaning the closure of an aneurismal orifice connecting the trunk of an artery with the aneurismal sac by suturing the orifice from *within* the sac and the obliteration of the sac by suture, I introduced in 1902, in a paper read before the American Surgical Association at its meeting in Albany, to describe an operation which it was my fortune to apply for the first time at the Charity Hospital of New Orleans while attempting the extirpation of a traumatic brachial aneurism in a negro, March 30, 1888, eighteen years ago. It was after the failure to cure this traumatic aneurism by the application of a proximal and distal ligature of the brachial artery that I attempted the extirpation of the sac; but the extirpation had to be abandoned because of the danger of injuring the median and ulnar nerves which were incorporated in the walls of the sac. The persistence of bleeding, after the removal of the tourniquet, from numerous collaterals which opened into the main trunk at each end of the sac, compelled me to adopt the suture with needle and silk to occlude the bleeding orifices. This simple expedient, suggested by the urgent hemostatic necessities of the case, appeared to be so easy and satisfactory that it seemed to me that any surgeon similarly situated, would have instinctively adopted this way of extricating himself from what would otherwise have been a difficult situation.

The detailed report of this case[1] attracted no notice.

---

* Read in the Section on Surgery and Anatomy of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Medical News, Philadelphia, Oct. 27, 1888.

and it was not until after my report[2] of four additional cases of aneurism treated by this method, in which the technic of the operation, as a systematic procedure, was fully described, that the value of the suture, methodically applied to the cure of aneurism, began to be realized, and the interest of other operators roused in the subject.

From June, 1902, the date of my first communication, to April, 1905, when the status of the operation was summarized,[3] I was able to present the reports of fifteen operations for aneurism performed by thirteen different operators who had adopted the method I had described. These fifteen cases, with my original five personal operations, summed up a total of twenty aneurisms treated by the method of intrasaccular suture up to April, 1905. In my second report[4] I was able to add ten more cases, from various sources, to the list, thus making a total of thirty, reported up to January, 1906.

I am now able to add six more operations to the record, four of which are of American origin and two foreign (Le Fort and Del Conte), which can not be recognized as typical procedures, such as I have described for this operation, though they are instances of the suture as applied to the closure of arterial orifices in aneurisms.

Very recently, I have learned through the program of the International Medical Congress, held in Lisbon, March, 1906, that Prof. R. Lozano, of Saragossa, Spain, has adopted my suggestions and operated on four aneurisms by arteriorrhaphy, including in this an abdominal aortic aneurism, one subclavian and two popliteals. This would swell the list of aneurisms treated by the method of suture to forty, including in this thirty-four cases reported by American operators who have adopted the procedure which I originally suggested, and six others reported by three foreign surgeons, two of whom have operated on two patients, by methods of their own, in which, however, the essential principle of suture is recognized.

With a list of thirty-four American cases thus far reported, which may later on be increased to forty when the details of these foreign cases are better known, we will soon be in a position to institute a fair comparison with other surgical methods of treating aneurisms, notably with (1) the ligature, (2) the method of Antyllus, (3) the method of Purmann, or Phylagrius, and (4) the more recent modification of the old operation suggested by the late lamented von Mikulicz.

The mere summary of the facts already gathered from the thirty-four American cases thus far reported is, I believe, sufficiently demonstrative to prove that the new method of intrasaccular suture has not only stood the test of experience, but that in all suitable cases it will accomplish, with greater certainty and simplicity, all that the older classical methods just referred to, have done and can do, for the cure of all aneurisms that are amenable to direct surgical intervention.

Before submitting a brief analysis of the reported cases I deem it necessary to explain, for the benefit of those who have not had access to my previous writings, what I mean by the cure of aneurism by the method of suture, or endoaneurismorrhaphy.

I will have to repeat here what I have recently had to state elsewhere, that "In spite of my efforts to elucidate the essential principles of the operation, and to simplify the *modus operandi*, a great deal of confusion and misapprehension still exists in the minds of many practitioners and surgeons who, having obtained their information from abstracts and second-hand descriptions given in journals and even text-books, regard it as a difficult and complicated procedure, necessarily restricted to a small group of cases which I have described as suitable for arteriorrhaphy," or, as I shall classify them in this article, under the head of "reconstructive endoaneurismorrhaphy."

It is evident that the ideas entertained abroad on this subject are very confused. Höpfner,[5] in his notable article of 1903, classified my cases with a group of normal arteriorrhaphies, and the latest German writer on aneurism, Otto von Frisch,[6] of von Bergmann's clinic, indulges in commentaries and criticisms of an operation which he evidently does not understand, and about which he has certainly not been correctly informed. Del Conte, of Naples, in dealing with this subject, also labors under a serious misapprehension as to the essential features of the operation. The idea that prevails abroad is that the operation which Bullock, of Lexington, Ky., first associated with my name, is essentially the "formation of a new artery from an aneurismal sac by suturing, after laying open the aneurism and turning out the clot." This is not at all surprising when we consider that this idea largely prevails in this country and that the few foreigners who have paid any attention to this subject have formed their conception of the procedure on the current interpretation given of it in our own periodical literature.

Such misconceptions of the method of intrasaccular suture, demand rectification in order that the operation may not be divested of its chief merit, as a simple and thoroughly practical measure applicable to the vast majority of cases in which the ligature and methods of incision and extirpation are still currently applied, as preferred methods. The errors that I wish to correct more especially are: (1) the belief that this method of intrasaccular suture is a technically difficult procedure; (2) that arterioplasty, or the reconstruction of an artery out of the sac walls (reconstructive endoaneurismorrhaphy) is the essential and necessary feature of the operation, whereas, in reality it is only a secondary variation or development of the fundamental procedure, shortly to be described, and is applicable only to a limited number of fusiform aneurisms. In fact it is a question, which we are now trying to answer, in what particular class of aneurisms arterioplasty is necessary or especially indicated. The bolder, more aggressive idea, that of arterioplasty, has clung tenaciously to the minds of superficial readers and reviewers, and the less striking but more generally applicable arteriorrhaphy as applied to fusiform and sacciform aneurisms, has been overlooked and ignored. It should be especially remembered that the general utility of the intrasaccular suture method, as I have understood it, depends on the ease and certainty with which the aneurismal orifices can be sutured and closed without interfering with the collateral circulation, much more than on the principle of reconstructing an artery.[7]

2. Annals of Surgery, February, 1903.
3. Address before the Alabama State Medical Society on "The Suture in the Surgery of the Vascular System," April, 1905.
4. Transactions of American Surgical Association, 1905.
5. Archiv. f. Klin. Chirurg., vol. 70, p. 430.
6. Langenbeck's Archiv., vol. lxxix, 1906.
7. In 1902, when my experience was limited to four personal observations, I felt that there were probably numerous cases of aneurism of the lower extremities, with edematous, cyanotic and choked limbs, in which the reconstruction of the lost artery would be necessary for the preservation of the limb. Subsequent experience with nineteen popliteal and eleven femoral aneurisms in which obliterative aneurismorrhaphy has been performed in the majority of cases, has convinced me that the cases of aneurism which demand the reconstruction of the blood vessels must be few indeed, and that the obliterative and restorative modes of intrasaccular suture, by preserving the collateral circulation undisturbed, are capable of meeting safely and efficiently all the exigencies of the situation.

I therefore submit my definition of endoaneurismorrhaphy and the operations that are derived from it.

SYNONYMS AND DEFINITIONS.

Endoaneurismorrhaphy.—The "Matas operation" (Bullock); "the radical operation for the cure of aneurism by the intrasaccular suture of the aneurismal orifices," essentially consists of two fundamental procedures: (1) the obliteration, by suture, of the vascular orifices which open into the aneurismal sac; (2) the obliteration of the sac by suture which brings its inner surfaces in apposition, or by methods of obliteration which leave the sac undisturbed and tend to secure primary healing by plastic union. In obliterating the vascular orifices that supply the sac, the parent trunk which nourishes the aneurism may be preserved or obliterated at the point of attachment according to the type of sac encountered. Hence the subdivision of endoaneurismorrhaphy into three varieties:

1.—*Obliterative endoaneurismorrhaphy* (the fundamental procedure), essentially consists in opening the sac freely without disturbing it from its surroundings and closing all visible arterial orifices within the sac, by suture, thus securing complete hemostasis and permanently stopping all further access of blood into the aneurismal cavity. The sac is obliterated by approximating its walls with buried sutures, and closing the wound with or without drainage; or, in rigid cavities, by simply infolding the overlying skin flaps and lining the cavity with them (*capitonnage* of the French) or by one of the several procedures or variations I have suggested.

The indications for the application of this obliterative suture, or fundamental procedure, are: All aneurisms in which the sac is of the fusiform type, in which there are two or more orifices of supply and in which the parent artery is entirely lost at the seat of the aneurism by blending with the aneurismal sac throughout its circumference. In these cases no attempt is made to restore the continuity of the parent artery; the blood stream is interrupted in that part of the vessel which directly opens into the sac and the arterial orifices are simply closed by suture, thus shutting off the sac from all sources of blood supply.

Up to the present time twenty-two cases illustrating this mode of procedure (obliterative endoaneurismorrhaphy) are exhibited in the group of thirty-four aneurisms contributed by American operators. Possibly several of the foreign cases are of this type, but as the contribution of Dr. Lozano has not yet appeared, we are not yet in a position to state the type of cases included in his report.

2.—*Restorative endoaneurismorrhaphy.* This variation in the procedure is solely applicable to aneurisms of the sacciform type, in which the parent trunk retains its continuity and normal outline, and the aneurism is a sac simply grafted on the vessel. By opening the sac freely and washing out the clot, the opening leading to the artery is exposed inside of the aneurism and is readily closed by a continued suture which penetrates through all the coats of the sac at the margin of the orifice of communication. By this procedure the blood supply of the sac is permanently arrested, the lumen of the parent artery remains patulous and the arterial stream supplying the limb, or dependent territory, is immediately restored through its normal channel. The sac is then obliterated by bringing its endothelial surfaces together with buried sutures and the surface wound is closed in the usual manner. Up to the present time seven operations of this type have been reported by American surgeons, all successful, and two, at least, of the foreign cases may be appropriately added to this list, making nine in all.

3.—*Reconstructive endoaneurismorrhaphy* (arterioplasty) is applicable solely to fusiform aneurisms in which the coats of the sac are firm, elastic and resistant and the two openings leading to the main artery lie on the same level, in close proximity, and are situated at the bottom of a superficial or readily accessible sac.

In aneurisms of this type, especially those of traumatic origin, the continuity of the parent artery may be restored by making a new channel out of the sac walls which can be brought together by suture over a guide (catheter or drainage tube) inserted into the proximal and distal openings of the aneurism. Before tying the last sutures, the guide is removed and the channel is left behind corresponding to the outline of the original artery. The sac is then obliterated by approximating its surfaces with buried catgut suture, as previously applied in the first and second procedures. Thus far, five cases of this operation have been reported, all by American surgeons. Two of these patients have relapsed. The first, Morris' case, was followed in six months by an amputation of the thigh, though it is recognized that a secondary operation by the obliterative method would have obviated the necessity for this sacrifice. In the second case (Danna's) when relapse occurred the sac was reopened, the obliterative method was applied with permanent and perfect success. The surgeons in the other cases (Craig Barrow of Savannah, 2; Van Lennep of Philadelphia, 1) report that their patients continue to do well, and, thus far, without relapse.[8]

SUMMARY.

Total, 34 cases of aneurisms of different types, reported by 21 American operators:

I. GEOGRAPHICAL DISTRIBUTION.

NEW ORLEANS: R. Matas, 5; J. A. Danna, 4; H. B. Gessner, 1; F. W. Parham, 1; F. W. Parham and E. D. Martin, 1; S. W. Stafford, 2; W. Kohlman and J. Newman, 1; total, 15.
NEW YORK: Robert Morris, 1; Willy Meyer, 1; Robert I. Abbe, 2; F. H. Markoe, 1; total, 5.
LEXINGTON, KY.: W. O. Bullock, Jr., 4.
SAVANNAH, GA.: Craig Barrow, 2; George H. White, 2; total, 4
PHILADELPHIA: J. H. Gibbon, 1; Chas. H. Frazier, 1; W. B. Van Lennep, 1; total, 3.
KANSAS CITY, MO.: J. F. Binnie, 1.
INDIANAPOLIS: H. O. Pantzer, 1.
PUGET SOUND, WASH.: D. N. Carpenter, U.S.N., 1.
FOREIGN (classed as atypical): Le Fort (Lille), 1 (popliteal)[9]; G. del Conte (Naples), 1 femoral (sacciform); R. Lozano, Saragossa, 4 (abdominal aorta, 1; subclavian, 1; popliteal, 2).

II. ANATOMIC DISTRIBUTION.

POPLITEAL, 19 (55 per cent.): Matas, 2; Bullock, 2; Robert Morris, 1; J. H. Binnie, 1; Craig Barrow, 1; H. O. Pantzer, 1; H. B. Gessner, 1; J. H. Gibbon, 1; J. A. Danna, 2; Willy Meyer, 1; F. W. Parham, 1; Robert Abbe, 1; F. H. Markoe, 1; S. E. Stafford, 1; Charles H. Frazier, 1; W. E. Van Lennep, 1.
FEMORAL, 11: Matas, 1; Bullock, 2; Danna, 2; G. R. White, 2; D. N. Carpenter, 1; Stafford, 1; Kohlman and Newman, 1; Craig Barrow, 1.
GLUTEAL: Robert Abbe, 1.
BRACHIAL: Matas, 2.
SUBCLAVIAN: Martin and Parham, 1.

III. SEX.

American Cases: Males, 32; Females, 2. Foreign: Female, 1 (del Conte); male, 1 (Le Fort).

Ages in 34 American cases: Youngest, 12 years; oldest, 65 years; majority between 30 and 60 years.

IV. ETIOLOGIC CLASSIFICATION.

TRAUMATIC, 8: Matas, 2; Pantzer, 1; G. H. White, 2; W. Meyer, 1; Markoe, 1; Bullock's fourth case, 1.
TRAUMATO-PATHOLOGIC, 14: Matas, 2; Bullock, 2; Gibbon, 1; Danna, 3; Parham, 1; Abbe, 2; Carpenter, 1; Martin and Parham, 1; Van Lennep, 1.

Cases classed in this group give a distinct history of some indirect traumatism (strain, lifting, indirect falls, etc.) associated with a pathologic arterial basis (syphilitic, alcoholic, arteriosclerotic).

8. Craig Barrow's first case was operated on May 28, 1904; his second case, April, 1906; Van Lennep's, Jan. 17, 1906.

9. The popliteal was extirpated after development of another aneurism in a different part of the artery.

PATHOLOGIC, 12: Matas, 1; Morris, 1; Binnie, 1; Barrow, 2; Gessner, 1; Bullock, 1; Danna, 1; Stafford, 2; Kohlman and Newman, 1; Frazier (?).

In accordance with accepted teaching, it is more than probable that the cases grouped as "pathologic" should be classed as "traumatopathologic," as there is always some direct or indirect traumatism which determines the localization of aneurisms in conditions of general arterial disease. The distinction of "pathologic" is made in the absence of a clear, recognized, local determining cause. This distinction is useful probably in accentuating the preponderance of the pathologic over the traumatic element in the causation.

V. TYPE OF ANEURISMAL SAC.

FUSIFORM, 23: Matas, 4; Bullock, 4; Morris, 1; Barrow, 2; Gessner, 1; Danna, 4; Gibbon, 1; Parham, 1; Parham and Martin, 1; Carpenter, 1; Stafford, 2; Van Lennep, 1 (nearly 64 per cent.).

SACCIFORM, 11: Matas, 1; Binnie, 1; Pantzer, 1; White, 2; W. Meyer, 1; Abbe, 2; Markoe, 1; Frazier, 1; Kahlman and Newman, 1. Foreign, 2; (2 sacciform Le Fort and del Conte).

VI. PROCEDURE ADOPTED.

1. OBLITERATIVE ENDOANEURISMORRHAPHY: (Applied to fusiform aneurisms) 22 out of 34 American cases: Matas, 5; Bullock, 4; Binnie, 1; Gessner, 1; Danna, 3; Gibbon, 1; Parham, 1; Abbe, 2; Stafford, 2; Martin and Parham, 1; Carpenter, 1.
2. RESTORATIVE ENDOANEURISMORRHAPHY: (All sacciform aneurisms) 7 cases: Lumen of parent vessel restored. Pantzer, 1; White, 2; Meyer, 1; Markoe, 1; Frazier, 1; Kohlman and Newman, 1.
3. RECONSTRUCTIVE ENDOANEURISMORRHAPHY (Arterioplasty), applied to fusiform aneurisms, 5 cases: R. Morris, 1; Craig Barrow, 2; J. A. Danna, 1; Van Lennep, 1.

VII. TREATMENT OF SAC.

A—Typical obliteration of the sac without drainage, according to the author's first method. Total, 10 cases: Matas, 3; Bullock, 4; Craig Barrow, 2; G. H. White, 1.

B—Atypical obliteration of the sac, without infolding skin flaps, (buried sac method): Morris, 1, Binnie, 1; Pantzer, 1; Gibbon, 1; Meyer, 1; Parham, 1; Abbe, 2; Markoe, 1; Stafford, 1; R. H. White, 1; Kohlman-Newman, 1; Frazier, 1.

C—Atypical partial obliteration of the sac by approximating walls and surrounding parts, packing and draining: Matas, 2; Danna, 4; Gessner, 1; Carpenter, 1; Stafford, 1; Martin and Parham, 1; Van Lennep, 1.

VIII. POSTOPERATIVE RESULTS.

(a) DEATHS: None directly attributable to the operation. (1) One patient (Pantzer's) died fifteen days after operation from associated pyelitis and nephritic coma while the healing of the wound was progressing satisfactorily. (2) Another patient (Stafford's No. 2), a negro, aged 59, died seventy days after the obliteration of a femoral aneurism by suture. This patient was the victim of the aneurismal diathesis. The first aneurism developed in the right popliteal and was extirpated after it had ruptured, Oct. 6, 1905. While the patient was slowly recovering from an infective synovitis of the knee following the operation, he developed a second aneurism in the upper left femoral, which grew rapidly and was obliterated by intrasaccular suture on March 30, 1906. Twenty days after the last operation, and while the wound was healing satisfactorily, the artery above the obliterated aneurism dilated and ruptured at a point where a traction loop had been applied, during the operation, for hemostatic purposes. The dilatation of the artery and rupture coincided with a violent acute edema of both lungs, caused, perhaps, by pulmonary thrombus or infarct. Great cyanosis, temperature 104 F., and intense dyspnea characterized this attack, which subsided after thirty-six hours, leaving the patient in great prostration. At this juncture the artery ruptured and a profuse hemorrhage with enormous hematoma occurred. The femoral was ligated above the seat of rupture a little below Poupart's ligament. Infection and suppuration occurred, followed by gangrene of foot. Six days after this ligation (April 26) secondary hemorrhage occurred at the seat of the ligature, necessitating the ligation of the external iliac above Poupart's ligament. The gangrene of the limb was marked. May 25, 1906, amputation at middle of thigh. Bed sores developed and the patient sank exhausted and marasmic, June 6, 1906.

While these events were taking place it was noticed that the right common femoral and abdominal aorta were undergoing dilatation, which would have developed into aneurisms had the patient survived. It is to be noticed that the circulation of the limb was perfect after the obliteration of the left femoral aneurism by endoaneurismorrhaphy, and that gangrene of the foot and leg did not occur until a ligature was applied to the artery above the obliterated sac.

(b) *Secondary Hemorrhage: None*, except as it occurred (in Stafford's No. 2) from causes not directly attributable to the method.

(c) *Gangrene: None*, except in Case 2 (Stafford), where it followed the application of a secondary ligature, as above described.

IX. RELAPSES.

(a) In obliterating endoaneurismorrhaphy (22 cases), none; (b) in restorative endoaneurismorrhaphy (7 cases) none; (c) in reconstructive endoaneurismorrhaphy or arterioplasty, two relapses out of five cases.

Of the two relapses amputation was performed in one case (Morris) by demand of the patient. In Danna's case (No. 2) the aneurism was cured by obliterative suture, after the relapse (following arterioplasty), became apparent. The other three patients (Craig Barrow, 2; Van Lennep, 1) have continued to do well up to date.

Arteriovenous aneurisms treated by separate suture of artery and vein, or by distinct applications of the suture technic, as distinguished from the ligature, were reported by Zoege v. Manteufel (1895), Camaggio (1898); Gerard-Marchant (1898), Peugniez of Amiens (1900), Korte (1904), Oliver of Uruguay (1904), Danna of New Orleans (1905), and Gessner of New Orleans (May, 1906).

2255 St. Charles Avenue.

DISCUSSION.

DR. WILLY MEYER, New York, reported the case of a young boy, 11 years of age, who, in cutting a stick in the woods, cut his popliteal artery by a slip of his knife. The wound was small but bled much. The boy was carried to the hotel where he was staying in a very weak condition. An improvised Esmarch bandage, a handkerchief and a stick, was applied and the nearest doctor sent for, who stitched the wound. After 12 days the boy was brought to New York, with a somewhat stiff knee. The family physician advised active and passive exercises. Four weeks later the boy noticed a throbbing tumor in the popliteal space. When Dr. Meyer first saw the patient, three months later, December, 1904, the tumor had all the characteristics of a popliteal aneurism, and having heard Dr. Matas' paper read at Albany, and being familiar with his experience with his operation, he concluded to try that method. An Esmarch bandage was applied. He cut down on the sac and found a sacculated aneurism. The sac was a large one with the opening low down, so that it was some time before he discovered just where the opening was situated. On account of this deep situation Dr. Meyer thought it best to introduce a large flexed copper sound into the lower portion of the artery, and it was pressed down by the assistant into the base of the sac so as to permit of making the suture as low as possible. After he had succeeded in running the suture across the opening, the probe was extracted and he continued the suture. After Dr. Meyer had placed the first continuous suture (silk) the crucial point came, viz., the removal of the Esmarch bandage. He was delighted to see that after its removal there was only a slight parenchymatous oozing. He closed the sac with a number of continuous sutures of chromicized catgut, and had the pleasure of seeing the whole wound heal nicely within 10 days. To-day the boy is cured entirely and uses his leg as well as he did before the operation.

DR. R. C. MCCHORD, Lebanon, Ky., reported a case of popliteal aneurism operated on according to the method described by Dr. Matas. The case was one of gunshot wound of the artery inflicted two years before I saw the patient. The aneurism was situated high up in the popliteal space, and at the site of the wound it was about the size of a hen's egg. It had recently burst. He constricted the leg above, cut down through the sac and stitched up the opening. But before he stitched up the sac, being a little fearful about his technic, and before closing the sac, Dr. McChord loosened the constrictor. There was a little hemorrhage. He simply took a bite down with the ligature and then proceeded to close the sac as Dr. Matas suggested. The wound healed by first intention, except one small spot where there was some infection, possibly due to faulty technic. The patient returned to his home within two weeks after the operation. The man had been home only a few days when there was a slight secondary hemorrhage. The doctors became alarmed and placed constriction above the point of bleeding for a few hours, and when the constriction was removed there was no further hemorrhage and the man made an uneventful recovery.

DR. STANLEY STILLMAN, San Francisco, said that he had employed this operation in one case. He emphasized the importance of thorough application of the Esmarch bandage, particularly because it is exceedingly difficult to reapply it when that is necessary. In his case, also one of popliteal aneurism, the patient stated that he had only noticed the tumor, which was about the size of a small egg, for three weeks. The sac could not be obliterated because of two reasons. There was not really a properly organized sac and the openings into the aneurism could not be closed by sutures that would hold. He advised this operation strongly, but cautioned those who attempt it to wait, in cases of recent aneurism, till the sac has become sufficiently tough to hold the sutures, and has become properly lined with endothelium.

DR. GEORGE R. WHITE, Savannah, Ga., has had two cases of aneurism on which he operated according to Dr. Matas' method. Both were aneurisms of the femoral artery, and both were of traumatic origin; one was caused by a stab wound and the other by a bullet wound. In both instances the operation was carried out successfully, and the patients are now at work and are as well as they ever were. He emphasized the point Dr. Matas made that the operation is not a difficult one if his description is followed closely.

DR. RUDOLPH MATAS said that he deeply appreciated the kind words of encouragement and praise expressed by the various speakers. He said that he realized most convincingly, however, that the good that there is in the method he suggested, especially its simplicity and safety, could never have been demonstrated without the coöperation of the 20 American surgeons who, with their characteristic alertness and keenness to test new ideas—as well as by their ability—have so quickly furnished the remarkable evidence which he submitted.

THE VALUE OF X-RAYS IN OCULAR THERAPEUTICS.

G. ORAM RING, A.M., M.D.

Ophthalmic Surgeon to the Episcopal Hospital, Philadelphia; Ophthalmologist to the Widener Memorial Home for Crippled Children, Philadelphia; Consulting Ophthalmologist to the American Oncologic Hospital, Philadelphia.

PHILADELPHIA.

Amid the illuminating advances that have characterized the rapid progress of medical science during a trifle more than the last decade, the spectacular and beneficent discovery of Professor Roentgen, of Wurzburg, occupies a position of acknowledged preëminence.

The classical papers which first startled the world of science have been followed by a flood of literature emanating from hosts of enthusiastic workers from almost every corner of the globe, and while the hopes and promises have to some extent failed of materialization yet the amazing therapeutic results that have been wrought up to the present moment should abundantly merit our profound appreciation and study.

Ophthalmic science has had its quota of fleet-footed workers, eager to develop the far-reaching possibilities of the newly discovered form of radiant energy. It is our purpose to institute an inquiry into the results thus far achieved and to attempt to define the present position of the *x*-ray therapeutics as applied to several important branches of ophthalmology.

When we consider the *x*-ray from a therapeutic standpoint we are, according to Freund,[1] dealing with the following forces emanating from the surface or within a vacuum tube in action: (1) heat, (2) ozone, (3) cathode rays, (4) ultra-violet rays, (5) rays composed of material particles, (6) Roentgen rays, (7) spark and brush discharges from the high tension, electric accumulation on the surface of the tube, (8) electric and electro dynamic waves, (9) waves of unknown character. Stern[2] believes the only rays that need to be considered are the *x*-rays, the unknown rays and the electric discharges from the surface of the tube.

The histological sequelæ of the *x*-ray application (Stern) are stimulation of the vaso-constrictor nerves of the blood vessels, paralysis of these nerve filaments accompanied by vascular dilatation, edema, the result of paralysis carried to a higher degree, and finally complete nerve paralysis, accompanied by destruction of tissue.

It is impossible in so brief a communication to place before you a complete summary of the brilliant work which the electro-therapeutist has achieved, but many opinions of value have been gleaned from the copious, and at times, polemic literature of the last few years. In answer to a communication addressed to many of the foremost ophthalmologists and *x*-ray experts of our country, I am able to present to you a number of hitherto unpublished opinions regarding the results of the application of this form of therapy to disease of the eyes and ocular adnexa. In the discussion to follow I hope that the various and at times divergent views expressed may be crystallized into definite and unfailing methods of technic that may make the amazing results claimed by certain observers a usual sequel of the application of this form of energy.

In a malignant disease of the eyelids and adjacent structures, radiotherapy (because of the favorable character of the resulting cicatricial tissue) finds one of the most satisfactory fields. When Steinbeck,[3] of Stockholm, exhibited before the Swedish Medical Society, a case of epithelioma, which he had cured by means of Roentgen therapy, a stimulus was given to this important work, which, notwithstanding its triumphs, must still be conceded to be in its incipiency.

My experience in a considerable group of epitheliomas, involving the eyelids and contiguous skin structures, and varying in size from a base of 10 mm. in its longer diameter to an extensive ulceration, at times embracing half of the upper and lower lids, and extending well on to the bridge of the nose, several of which were totally inoperable, has been so uniformly satisfying that I am accustomed to leave little doubt in may patient's mind regarding the certainty of a cure. In only one such case that has come under my observation was there any tendency to a recurrence at the end of about eighteen months. This was subjected to a few further treatments and has remained in perfect condition through the succeeding year.

Mayou[4] and D. Walsh (London) presented a most promising series of results before the Roentgen Society, Dec. 2, 1902, the former claiming that all cases of so-called rodent ulcer of the eyelids can be cured. The inflammation which can be produced by the *x*-ray varies, according to these authors, from a mild leucocytosis (stimulation) to an absolute destruction of tissue. Added experience seems to emphasize the opinion, early expressed, that this profound change is largely superficial, and is not produced by the rays that penetrate deeply. It is the function of the leucocytes to break up and remove all irritating substances, or to encapsulate and thus render them innocuous.

One of our foremost authorities, William Allen Pusey[5] (Chicago), reports having treated several cases of epithelioma, in which there was no involvement of the deeper orbital tissues, and all resulted in cure where sufficient treatment was permitted. No relapses have occurred, and some of the cases were treated about three

---

* Read in the Section on Ophthalmology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

1. Freund: "Elements of General Radio-Therapy," Vienna, page 323.

2. Stern: "Practical Results Accomplished by Radiant Energy," New York Med. Jour., March 10, 1906.

3. Steinbeck: Quoted from "*X*-Rays in Cancer and Other Diseases," by Richard J. Caven.

4. Mayou: "The Use of *X*-Rays in Ophthalmic Surgery," Archives of the Roentgen Ray, January, 1903.

5. Pusey, W. A.: "Report of Cases Treated with Roentgen Rays," Chicago Medical Recorder, April, 1902. For Dr. Pusey's technic see Chicago Medical Recorder, April, 1900, and Journal of Cutaneous and Genito-Urinary Diseases, July, 1900.

years ago. John Green, Jr.,[6] St. Louis, Mo., also concludes that in epithelioma and rodent ulcer of the eyelids, *x*-ray therapy surpasses all other methods of treatment and can be relied on to cure all such cases.

Sweet[7] believes that it is no longer right to resort to plastic operations in these two conditions, basing his judgment on the successful results of 18 out of 20 cases treated.

John E. Weeks[6] (New York) regards the *x*-ray treatment of very great value in epithelioma and has placed at my disposal the notes of one private case of epibulbar epithelioma of very great interest.

The patient, a man aged 54, had a growth occupying the inner half of the ocular conjunctiva to the caruncle, and involved about the inner third of the cornea.

Diagnosis was confirmed by microscopic examination.

About 100 *x*-ray exposures were given, extending over a period from March, 1905 to January, 1906; the exposures averaging 7 minutes each at 10 inches from the Gundelach anticathode using a tube of medium tension. Patient is virtually well. Vision 20/40. Tissues of the globe have not suffered. The exposures were made through a tube 1¼ in. in diameter. There was no other protection.

De Schweinitz[6] (Philadelphia) has had four cases of "entire and rapid cicatrization" with no relapse. In two additional cases the results were entirely negative, or possibly the condition was aggravated. In one of the latter, excision was practiced with subsequent application of the rays, without recurrence. De Schweinitz concludes the rays should be tried for a certain period, and if the results are not good, then excision with or without plastic operation should be practiced.

Charles Lester Leonard[6] (Philadelphia) whose experience has been extensive in treatment of epitheliomas and various skin lesions involving the eyelids, regards it as uniformly and permanently successful. Baker[6] (Cleveland) writes that he has had five cases of rodent ulcer with perfect recovery. One case of special interest has been under observation for ten years, but all this time the disease was slowly progressive, not only the eye, but the cheek and temple were involved. The eye was enucleated and, later, *x*-ray applications were made for a year or more less regularly, resulting in complete cicatrization with no evidence of recurrence at the end of four years. In a sixth severe case in which both *x*-ray and radium were used, a complete cure has been effected, the curative agent being, in Baker's judgment, the Roentgen ray. In eight cases of epithelioma, the results have been entirely satisfactory, although in most of the cases the knife was used and followed by the *x*-ray. There have been no recurrences. Baker had two cases of lupus involving the eyelids that have been "very greatly improved if not entirely cured by the *x*-ray."

Hermann Knapp[6] (New York) has seen "four temporary results in epithelioma and the like." Stevenson[6] (Albert Lea, Minn.) has used the *x*-ray with success in treatment of lupus of the eyelids only. Newcomet[6] (Philadelphia) advises me that he has treated about 30 cases, few of which have shown any disposition to recur.

The names of a host of foreign and home workers in ophthalmologic or electrotherapy lines could be added, if additional testimony were needed, among them Hamer,[8] Hall,[9] Darier[10] and Bettremieux;[11] in our own country, Taylor,[6] Dixon[6] and Marple[6] (New York), St. John[6] (Hartford), Holt[6] (Portland), Black[6] (Milwaukee), Wescott[6] (Chicago), Howe[6] (Buffalo), Schamberg,[6] Hansell,[6] H. K. Pancoast,[6] S. Lewis Ziegler[6] (Philadelphia). Schamberg's case is of considerable interest, as the case involved not only the lids, but the conjunctiva as well. A perfect cure was effected without sign of recurrence at the end of two years.

S. C. Ayres[6] (Cincinnati) has had one case of epithelioma of outer and lower margin of right cornea of six years' duration. It was curetted, but soon recurred. Under *x*-ray treatment, pain was relieved and the condition improved. He was not kept under continuous treatment, and later increase in the growth compelled enucleation.

Bulson[6] (Fort Wayne) advises me that in four cases of extensive carcinoma two were cured, a third probably cured, and the fourth did not continue treatment. Woods[6] (Baltimore) believed the rays successful in preventing a recurrence after an orbital evisceration for extensive carcinomata.

Würdemann[6] reports a case of carcinoma of the orbit beginning in the skin of the external canthus. The operation consisted of exenteration of orbit and resection with partial removal of malar, superior maxillary and orbital process of the frontal bones. The patient was treated about two years by *x*-rays several times a week; a suspicious sore was removed by secondary operation, and the result was complete cure with full lining of orbit by skin.

X-RAYS IN SEVERE CASES.

As illustrative of the curative possibilities of the rays in the more extensive carcinomatous involvement of the orbital and adjacent tissues, it is only necessary to refer to cases of which this one reported by Dr. Pusey,[5] of Chicago, is a type:

***Deep Carcinoma in the Orbit.*—Patient of Dr. Wm. H. Wilder, treated by Dr. Pusey.**

The growth involved all of the structures in and around the orbit, and the terrific intracranial pain seemed to leave little doubt of meningeal involvement.

After nearly two months of treatment and a resulting *x*-ray burn coincident with increasing pain, the case was regarded as hopeless and discharged. About six months later it was found he was still living; the mass had shrunk and lids would close. He is free from pain, eats and sleeps well.

Of the 10 cases so carefully reported by Chas. S. Bull,[12] two were extensive carcinomata. One was a case of the eyeball and orbit in which operation was advised, but declined. The case was cured by twenty-seven *x*-ray exposures. The other was a case of deep-seated carcinoma involving the nose, eyelids and orbit, likewise perfectly cured by thirty-four exposures.

As noted by George C. Harlan[6] (Philadelphia), J. W. Pancoast[6] and many others, with whom probably all of us are in accord, it must be remembered that in many of the deep-seated growths of the carcinomatous type the rays have totally failed to arrest the disease, but even in such cases there is little doubt of the pronounced anodyn effect of the exposures, and, while, as suggested by Nelson Black[6] (Milwaukee) and others, the deeper the orbital involvement the less favorable result can be expected, yet the estimate of Jackson[6]

6. Personal note.
7. Sweet, William M.: "Roentgen Ray Treatment of the Eye and Its Appendages," Medicine, April, 1904.
8. Hamer, J. F. X.: "Carcinoma palp. inf. behandel med. X-Straalen," Ned Tijdskrift v. Geneeskunde, 1904, No. 12.
9. Hall, Edward: "Rodent Ulcer, Treated by the *X*-Rays," British Med. Jour., Jan. 10, 1903.
10. Darier, A.: "Introduction à l'étude des rayons X en therapeutique oculaire," La Clin. Ophth., July 10, 1903.
11. Bettremieux (Roubaix): "Rayons X en therapeutique oculaire," Ibid.
12. Bull, Chas. S.: "The Treatment of Inoperable Cases of Malignant Disease of the Orbit."

(Denver) that it is of great value even in the more extensive types of orbital carcinoma can be abundantly maintained.

SARCOMA.

In a previous paper[13] I considered the use of Roentgen therapy in attacking this form of malignant neoplasm. Reference was made to the remarkable result in L. Webster Fox's case of inoperable sarcoma involving the orbit and accessory sinuses apparently cured by fifty exposures to *x*-ray. A daily treatment of five minutes' duration, with a high vacuum tube placed at 10 in. distance, containing a current of 4 amperes, was maintained for 4 weeks, the frequency of the treatment then being reduced on account of an excessive erythema.

In the same paper the gratifying reports of a number of cases of sarcoma *x*-rayed by Leonard and by Pfahler, of Philadelphia, involving the face, neck, lip, nostril and antrum were accepted as giving promise of similar brilliant results with improved technic, when the growth involved the orbit and surrounding structures. The immediate application of the method was suggested before radical operation was attempted. If unsuccessful in removal of the growth, Leonard, who has had a very wide experience, claims that its virulence will be decreased and the dangers of metastasis lessened. Other methods of attack were carefully considered in the event of failure with the *x*-ray.

I will refer now to a few additional reports of cases treated by the rays as introductory to a further discussion of this important subject.

Beclere[14] reports the case of a patient affected with sarcoma of the floor of the orbit who was cured by *x*-rays. The disease had lasted four years. Two operations had been performed, the last one including removal of the eye. All other methods of treatment had failed, but improvement set in as soon as radiotherapy was employed. Histologically, the tumor was found to be a malignant sarcoma. Beclere reports an additional case of orbital sarcoma cured by *x*-rays.

Kienbock[6] reports a sarcoma cured by *x*-rays. This case is of very unusual interest. A growth having appeared in the nose seven years before, in spite of operations oft repeated, had invaded the adjoining structures and produced exophthalmos on both sides with subsequent optic atrophy. Pain ceased after the first treatment, and after thirteen applications the growth (an endothelial sarcoma) entirely disappeared. Eyes resumed their normal appearance and vision partly returned. Grossman[6] reports a similar case which had almost entirely disappeared under the *x*-rays.

Theobold[6] (Baltimore) has had one case of marked exophthalmos (unpublished) with the diagnosis of inoperable sarcoma of the orbit—a diagnosis in which two other surgeons concurred. Under the *x*-ray treatment the case rapidly improved and after a lapse of seven months seemed to be cured. Pfahler[6] advises me that he has treated three cases of primary orbital sarcoma, with resulting disappearance of the growths. A fourth case, which was recurrent, showed no ultimate improvement.

When to these reports we add the case of Mosely,[15] orbital sarcoma, that of Pratt,[15] melanosarcoma of orbit, that of Harper,[16] melanosarcomatous pigment areas on the sclera, and that of Fox,[17] true sarcoma of the lids, all cured by radiotherapy, we surely have abundant reason for some satisfaction at the results already achieved.

Many observers have utilized the rays successfully in preventing a recurrence after the removal of malignant orbital growths, notably sarcoma, and the recent experience of Wescott[6] (Chicago) and Chas. S. Bull[12] and Marple[6] (New York) will serve to bring to our attention this important phase of the subject. Wescott advises me that he exenterated a case of orbital sarcoma, and, feeling positive that all of the disease was not removed, subjected the patient to *x*-ray treatment for three months. There was no evidence of recurrence at the end of one year. On the other hand, Bull, in his painstaking report of eight cases of orbital sarcoma, has not found radiotherapy of value as a curative agent either before or after operation. He, however, believes it distinctly effective in the relief of pain. Marple has had one case of orbital sarcoma with exenteration of the orbit. *X*-ray was used in the effort to prevent a recurrence, which it failed to do. In one of my own cases it seemed to prevent a recurrence *in loco*.

TRACHOMA.

In the treatment of the nodular formations or masses of round-cell infiltration of the conjunctiva, known as trachoma, the ophthalmologist has found one of his most difficult problems. The various remedies used may be classed under the heads of chemical or mechanical irritants. The excessive and often damaging cicatricial tissue remaining after the application of the chemical irritant classes this method as far from ideal.

The rolling, brushing and other allied methods are of unquestioned value, but the cures are frequently incomplete even with the added chemical treatment. The cure is wrought, in part, by mechanically removing the diseased masses and, in part, by the induction of a leucocytosis with subsequent cicatrization. Since the disease is probably allied to lupus, it may be caused by an undiscovered bacillus, the destruction of which by the methods noted results in pronounced betterment.

Stephen Mayou[18, 4] lauds most highly the results achieved by *x*-ray treatment of this condition, claiming (1) less deformity of the lid after treatment, (2) it is practically painless, (3) the pannus clears more thoroughly. His first case, presented before the London Ophthalmological Society early in 1902, was apparently the initial application of the method. "Instead of the white puckered conjunctiva gained by other methods, a supple non-contracted, non-scarred conjunctiva, with no obliteration of the fornices," was noted. In every one of 15 cases a perfect result was achieved. No burning of the globe occurred in any case. Two-minute exposures were given from four to six successive days, followed by a week's rest; then came semi-weekly exposures until slight photophobia began. When granules disappear, the treatment should cease, as the infiltration induced by *x*-ray will be some weeks in subsiding. The patient is seated 9 inches from the anode with a moderately soft tube and a current of 6 amperes. The metal mask formerly used is now discarded, as the patient is not exposed sufficiently to get any skin reaction.

13. Ring, G. Oram: "Orbital Sarcoma, with Report of a Case and a Discussion of Radical Operation, X-ray Therapy and Electrochemical Sterilization," N. Y. Med. Jour., June 10, 1905.
14. Beclere: "Sarcome de l'orbite gueri par les rayons-X," Gaz. des Hôp., June 14, 1904.
15. "Radiotherapy in Ophthalmology," quoted by Allen.
16. Harper: "Melanosarcomatous Pigment Areas on Sclera," Amer. X-Ray Jour., 1902, p. 1164.
17. Quoted by Würdemann.
18. Mayou: "The Treatment of Trachoma by X-Rays," Trans. of the Ophth. Soc., London, S. 10.

Stevenson and Walsh[19] selected severe cases which ordinarily required a very prolonged treatment by old methods, and they were cured in a few weeks. They report equally good results in a case treated less than two months with a high frequency current. After twenty-three painless applications of the brush discharge from a vulcanite electrode connected with a Cox's d' Arsonval apparatus, a disease disappeared that would have lingered on two or three years under ordinary treatment.

Walsh[20] (London) has treated four cases of severe double trachoma, with complete cure in two and marked improvement in the remaining two. Good effects were the same if lids were closed or everted.

Vassutinsky[21] obtained favorable effects on trachoma by means of the Roentgen rays. These rays diminished the infiltration, caused the disappearance of the granulations and of the pannus, and produced a pronounced improvement in the subjective signs of the malady. As a rule, however, trachomatous granulations disappeared but slowly under the influence of Roentgen therapy. The rays proved to be harmless in treating the eyes, no evil effects were noted in any case, nor was pain experienced by the patients. The author thinks that the rays are of service in cases in which ordinary methods of treatment fail.

Ruggero Pardo[22] reports two cases of trachoma which derived benefit from the application of *x*-rays.

CASE 1.—The patient, aged 60, had suffered from double trachoma for three years. In the right eye was dense pannus, abundant catarrh, and congested iris. The left eye was similarly affected, but to a much less degree.

CASE 2.—The patient, aged 14, had had trachoma two years. A Crookes tube with a spark about 700 mm. was used at a distance of 45 to 30 cm. for four to ten minutes at a time. Only one eye was treated, the other being carefully protected with a metallic shield. About six applications were made in each case at intervals of three days. As a result of the treatment the conjunctiva became smoother, the secretion ceased, the pannus cleared, and there was marked improvement in vision in the first case. In the second case many of the tarsal follicles disappeared, the secretion diminished, and there was considerable improvement in the subjective sensations.

Geyser[23] maintains that a few exposures, six to eight, will suffice to bring about a perfect cure. An important consideration is to cause absorption and stimulate normal nutritional processes; nothing seems to answer the purpose any better than the direct contact of the tissues with a high-frequency vacuum tube generated by a static machine or *x*-ray coil. Complete details of technic are given in the article.

Horniker and Romanin[24] (Trieste) report the history of three successful cases of trachoma treated by *x*-rays. The methods of Mayou, Cassidy, Rayne and Pardo are compared. The method of Mayou of applying the rays directly to the everted lids was selected, as the strength of current did not have to be judged with such exactness in order to prevent skin lesions. Cassidy and Rayne applied the current to the closed lids. Notwithstanding the care exercised, dermatitis of the hands developed and, for the purpose of holding open the everted lids, Romanin devised an instrument which is carefully described and which is said to make the performance perfectly comfortable to physician and patient. He claims that one single advantage of the Pardo method which makes prominent the retrotarsal fold can likewise be obtained by his instrument by placing a compress behind the everted lid and by turning the lid holder by screws. Although eminently successful in three cases, Horniker does not attempt to decide on its final value until a larger mass of authoritative material shall have been collected.

The investigation of Heineke[25] as to the results of the application of the *x*-rays in disease of the spleen and other lymph organs in rabbits, more particularly in leukemic conditions, pointed to a destruction of lymphocytes in the follicles.

Buschke and Schmidt[26] found a cessation of proliferation of cells in kidneys and testicles, which confirmed the earlier findings of Albers Schonberg[27] concerning azoospermia. These results induced Stargardt[28] (Kiel) to investigate the results of the rays on trachoma mass, which is essentially composed of lymph follicles.

Kuhnt (Königsberg) has practiced excision of the upper retrotarsal folds for many years. It was at his clinic that Stargardt was permitted to *x*-ray the folds before excision. In the application the method of Kienbach was modified; that is to say, one long exposure (twelve minutes with soft tube distance of 5 cm.). Stargardt believes there is no danger to the conjunctiva in these exposures. Microscopically the principal change was noted in the follicles. In one instance the retrotarsal fold was excised in 16 hours; in a second, 30 hours; in a third, in 14 days. In the first and second cases highly colored masses were scattered over the whole follicle which were regarded as the remains of destroyed nuclei. These masses varied in shape and size from that of a lymphocyte to that of the smallest particle. They were mostly strongly colored with the stain, a few less intensely so, though very scarce some were non-stained. These masses lie mainly between the cells, partly in the phagocytes. The phagocytes are similar to the Villard type. Their number is increased. They are unevenly distributed over the whole follicle and do not show the regular arrangement usually seen in trachoma. In addition to the increase of phagocytes, a strong increase in Villard's giant cells was also noted. The giant cells are very plentiful, and we also find from three to six large black colored nuclei which lie in a mass of plasma substance. The decrease of threads produced by the segmentation of cells was very striking.

Cassidy and Rayne[29] (Baltimore) report the case of an artist's helper who suffered for nine years from granular lids.

Patient had been operated on twice with grattage and twice by avulsion. The usual astringent and caustic treatment was also exhausted. Treatment was begun November 8, 1902, through closed lids. Cautious tentative exposures of three minutes each, separated first at intervals of ten days, then five days,

19. Stevenson and Walsh: "On the Curative Treatment of Trachoma by the X-ray Tube Exposure," Medical Press, 1903.
20. Walsh: Medical Brief, No. 31, 673, 1903, also Lancet, No. 10, p. 237, 1903.
21. Vassutinsky: "Roentgen Rays in Trachoma," Roussky Vratch, Jan. 8, 1905.
22. Pardo: "Cases of Trachoma Treated by Roentgen Ray," Gaz. d. Ospedali, Milan, No. 13, p. 1193.
23. Geyser, Albert C.: "The Successful Treatment of Eighteen Cases of Granular Lids by the X-ray and High Frequency Vacuum Currents," Jour. of Advanced Therapeutics, May, 1904.
24. Horniker and Romanin: Zeitft. f. Augenhlk., 1904.
25. Heineke: "Ueber die Einwirkung der Rontgenstrahlen auf innere Organe." Munch. med. Wochft., 1904, p. 785.
26. Buschke and Schmidt, E.: "Tierversuche über die biologischen Wirkung der Rontgenstrahlen," V. Inter. Dermatologen-Kongress, Berlin.
27. Albers Schonberg: "Ueber eine bischer unbekannte Wirkung der Rontgenstrahlen auf den Organismus der Tiere," Münch. med. Wochft., 1899.
28. Stargardt, K.: 'On the action of Roentgen Rays on the Trachoma Follicle," from the Eye Clinic in the University of Königsberg in Prussia, Zeitft. f Augenhk., 1905.
29. Cassidy and Rayne: Jour. of Eye, Ear and Throat Diseases, 1903.

then tri-weekly exposures were given at a distance of 12 inches, and a spark gap of one-sixteenth of an inch. These treatments caused excessive lacrimation which diminished on successive exposures and finally ceased. By the thirty-fifth exposure both eyes were free from trachomatous granules. The patient's lids are now little inflamed and are not thickened. The mucous membranes are still red, but free from swelling and discharge. There are absolutely no trachomatous granules, photophobia is entirely absent, and the patient uses her eyes constantly without discomfort.

The effect, according to three writers, is neurotrophic. Normal tissues are stimulated to a new vigor, and pathologic tissue, always being of less resistance, assumes a retrograde metamorphosis.

At a regular meeting of the Philadelphia County Medical Society, Nov. 23, 1904, W. S. Newcomet and J. P. Krall[30] (Philadelphia) exhibited a girl of eighteen who had been subjected to all the operations for the cure of trachoma without success.

Patient was treated with the *x*-ray from July, 1903, until January 1, 1904. The inflammatory reaction was so intense that it was thought better to abandon the treatment, Later, however, it was found that she could count fingers at close range. The cornea of the eye was entirely clear and only with special illumination could fine blood vessels be seen. The eye not treated with the *x*-ray showed all the symptoms that the treated eye formerly exhibited. The condition of the patient had been present since infancy, and she had been unable to see across the room. Treatment was given every other day for five minutes for about six weeks, when a burn developed and treatment was withheld. Newcomet believed the result to be due to the accidental burn produced in the course of treatment.

H. N. Bishop[31] (London) gives the results of electrical treatment of trachoma at the Middlesex Hospital. Cases had been treated with well equipped apparatus, with rays, high-frequency currents, and radium. With regard to the *x*-rays he explains that there were two sets of rays emanating from the tube, (1) the *x*-rays proper, (2) the overflow rays that cause the severe burning of the skin which sometimes occurred. The former of these rays were used. Four cases of trachoma were treated in this manner. Two were young women. In one, fifty applications were made in five months. The right eye showed changes that might reasonably have been produced in this time without treatment, while the left, which was at first unaffected, steadily got bad. The disease subsequently cleared up in the usual manner with bluestone. None of the three other cases did any better. The seven cases treated with high-frequency currents did not improve at all.

Kassabian[6] (Philadelphia) has treated four cases in his work at the Philadelphia Hospital, two acute and two chronic. All of the photophobia and lacrimation markedly manifest in the acute cases disappeared after four or five exposures and the results achieved in all four cases were so satisfactory that Kassabian believes we have in the *x*-ray a most valuable curative agent, if properly used. Kassabian's technic in treating cases of trachoma consists in covering the Crookes' tube with a dark cloth and darkening the room. He uses adhesive plaster to fix the lids and expose the surface of the eye, to prevent the burning of the nurse's or assistant's fingers. He covers the face with a leaden sheet and treats one eye at a time through an aperture in the lead. Rapidity of action is obtained by getting the patient to keep the eye open while under treatment. There is less danger of burning the cornea than there is to the skin of the eyelid, but should a slight corneal haziness result it quickly disappears and a corneal scar will be absorbed.

W. Franklin Coleman[6] (Chicago) says that in 12 cases of trachoma his results in the treatment have been so uniformly favorable that he would not consider any other method. Coleman's first case was exposed to the *x*-ray July 1, 1903. The disease was of 20 years' standing. A high-frequency tube was used with ten minutes' exposure three times weekly. A perfect recovery resulted in six weeks. He now uses a two and a half inch spark, ten minutes' exposure at six inches with low tube, with lids closed and no mask. Every case treated has resulted in perfect cure.

Ayres[6] (Cincinnati) reports one severe case of trachoma with marked hypertrophy of conjunctiva. Three other cases, trachoma, less severe, all resulted in perfect cure. Pfahler[6] (Philadelphia) has treated 15 cases of trachoma with *x*-ray. All showed improvement, a few decided improvement. He believes the rays should be used after accepted methods have been given a fair trial. He has never seen any harm result to the eye from the exposures.

Schamberg[6] (Philadelphia) has treated one case at the Polyclinic Hospital with most satisfactory results. There were pronounced vegetations on the tarsal conjunctiva. Pain was relieved and the vegetations disappeared. In this case the eyelids were averted and the rays applied directly to the granulation. Twenty-five treatments of five minutes' duration were given twice weekly.

Jackson[6] (Denver) advises me that in his experience *x*-ray does some good and may cure acute cases, but not more quickly or certainly than older methods. It has not cured or permanently benefited the bad cases. L. Webster Fox[6] (Philadelphia) has utilized *x*-ray, but not with encouraging results. Fox prefers the older recognized remedies. Suker[6] (Chicago) states that the *x*-ray has given him no results or even encouragment in treating trachoma of any type. de Schweinitz[6] (Philadelphia) regards the results as fairly good in the few cases in which he has used the method, but considers his experience too limited to render an expression of his opinion of value. Ordinary therapeutic agents or operative measures have served him as well. With improved technic and exact dosage, the measure offers a prospect of success and should be given the fullest trial. His personal experience is limited to two cases, neither of which was as much benefited as it would have been under ordinary treatment in the same period. He has seen two cases in the care of colleagues in which the results were somewhat better than those that follow the usual applications and surgical procedures. Sweet[6] (Philadelphia) has treated a number of cases of trachoma by the *x*-rays, but did not consider the results to be any better than could be secured by the usual local measures.

VERNAL CONJUNCTIVITIS.

The utterly unsatisfactory results of all forms of treatment of this extremely intractable type of conjunctival hypertrophy determined Allport[32] (Chicago) to test the *x*-ray in a case of characteristic palpebral type.

The patient, a young lady, aged 19, living in a refined and wealthy environment, gave a history of seven years' experience with the disease. The growths were first amputated, then

30. Newcomet and Krall: Trans. Philadelphia County Med. Soc., Nov. 23, 1904.

31. Bishop, Harman N.: "Electrical Treatment of Trachoma," British Med. Jour., Aug. 26, 1905.

32. Allport: "A Case of Vernal Conjunctivitis," Ophthalmic Record, October, 1903.

subjected to about eighty *x*-ray applications in less than three months. Photophobia, redness, itching and irritability were removed at once, and the patient apparently perfectly cured, since she has gone through two subsequent summers without any recurrence of the disease.

The case was *x*-rayed by Pusey, and the diagnosis confirmed by Casey Wood, Woodruff and Guilford, Chicago.

Pusey[6] has had one additional case in which the disease was cured. William Campbell Posey[6] (Philadelphia) believes that *x*-ray exerted decided influence on the course of the disease. He has kindly placed at my disposal a brief note of his case.

The patient, a man, aged 35, came to the Wills Eye Hospital in May, 1905, with the statement that for two years preceding, during the warm months, his eyes had annoyed him greatly with itching and smarting, increased lacrimation and great sensitiveness to light. These symptoms had subsided with the appearance of cold weather again in the autumn. On examination, it was noted that the patient was suffering from a typical attack of vernal conjunctivitis of the palpebral type, the conjunctiva being greatly infiltrated and whitened, and there being a number of flattened granulations in the conjunctiva of the upper lid. The bulbar conjunctiva was unaffected.

Antiseptic washes of boracic acid and cocain, and solutions of adrenalin, in strengths varying from 1-10,000 to 1-5,000, were prescribed. The patient was instructed also to report to the Polyclinic Hospital for the administration of the *x*-rays. These were continued during the summer months, the applications being made twice a week, and each seance lasting about five minutes. Subjective symptoms were apparently greatly influenced by the rays, for notwithstanding that local treatment was interrupted for a time, the itching and smarting sensations were much less in severity. After some weeks treatment the follicles underwent a change and became markedly less pronounced. While during the preceding August and September the patient had suffered great annoyance, these months were passed in great comfort. No deleterious action from the rays, either on the eye or adnexa, was manifested at any time.

Zentmeyer[6] (Philadelphia) has had two cases of vernal conjunctivitis treated by means of *x*-ray by Sweet, one resulting in perfect cure, the second in marked improvement.

In the first of Zentmeyer's cases, a boy of 15, the affection was in both eyes, but worse in the right. The upper lids were studded with typical flat granulations. At the limbus above and to the temporal side were the nodular swellings overlapping the cornea. When treatment was stopped, a year ago, the granulations had entirely disappeared from the lids, but a few of the nodules persisted at the limbus. He passed through last summer without any discomfort and at the present time the palpebral surfaces of the lids are normal. The few nodular swellings still remain, but have not increased during the year. The boy was so satisfied with his improvement that he did not return for further treatment.

Sweet[6] had two remaining cases, which disappeared from treatment after the subsidence of acute symptoms. de Schweinitz[6] (Philadelphia) has utilized *x*-ray in only one case of vernal conjunctivitis. The treatment was of short duration, and the negative result ought not to be utilized in any estimate of the value of this agent in treating this form of conjunctival diseases. Suker[6] (Chicago) has had sufficient experience to convince him that *x*-ray treatment of vernal conjunctivitis is of positive value. Jackson[6] (Denver) believes that *x*-ray sometimes diminished the discomfort, but prolonged trial has shown no curative influence.

CONGENITAL NEVI.

At this writing I am having treated a case of nevus of the left upper eyelid, which had attained considerable proportions. There is apparently being effected a rapid cure.

Stewart (Thomas S.) and Given (Ellis V. W., Philadelphia) advise me they have likewise had several apparent successes with the rays.

CHRONIC CONJUNCTIVITIS.

By courtesy of Kassabian[6] (Philadelphia) I am enabled to add to the various types of cases amenable to *x*-ray treatment that of chronic conjunctivitis.

The patient, a man, aged 35, had suffered for seven years, with an obstinate type of this condition. Every important method of treatment had been exhausted by the two distinguished surgeons, Knapp of New York and Jackson of Denver, whose patient he had been. At the suggestion of Dr. Schneideman of Philadelphia, and with the added recommendation of Knapp and Jackson, *x*-ray treatment was begun in June, 1904. During all treatments the eyes were open, there were no signs of dermatitis, the lashes and brows were not the least affected by treatment. Patient is perfectly well. He insists on exposing both eyes to the rays once a month for five minutes, which Kassabian regards as unnecessary, considering the cure complete.

In the language of Kassabian, the technic is as follows:

Induction coil (15-inch spark producing) energized with 110-volt current, mechanical interrupter 2 amperes going to primary coil. Crookes' tube with "medium vacuum" anode being at a distance of 12 to 15 inches (30 to 38 cm.). The face and chest were covered with a sheet of lead through one opening of which the patient looked towards the tube during exposure. Treatments were given for the first three consecutive months twice a week, the time of exposure being gradually increased from one to two minutes. On September 19, 1904, after twenty-four exposures, the condition was greatly improved; the conjunctiva had become pale on the eye that was treated. During October, November and December treatment was continued only once a week, exposure two and one-half minutes. Treatment was discontinued for two months (January and February, 1905) and begun again March 1, with an exposure of three minutes once a week. Blood vessels are very small and fine, conjunctiva pale and white. Regular treatment was continued three months longer.

GLIOMA.

Hilgartner[33] gives a brief note of a most extraordinary result of Roentgen ray treatment in a case of double glioma in a child aged three and one-half years. The growth in the right eye largely filled the vitreous and could easily be seen in its incipiency in the left eye. Pain was severe. Eighty-four exposures were given. Right eye shrank to two-thirds of its natural size and the growth in left eye was entirely absorbed.

Pusey's[33] results have been sufficiently encouraging to warrant his urging the use of the rays after removal of glioma and sarcoma to prevent a recurrence.

Würdemann[6] reports one case of glioma beginning in retina and extending to orbit, maxillary antrum and nasal passages. Three exenterations of the orbit were performed. *X*-rays were finally used for one year with a result of hindrance of development and absolute prevention of pain.

GUMMATA.

Parker, F. C.[6] (Norristown) reports a most interesting case of bilateral gumma of the orbit in a child eight years of age. Diagnosis was confirmed by microscopic examination, specific and *x*-ray treatment were both instituted, and it was Parker's opinion, based on the course of the case and its final cure, that the Roentgen ray applications were of very positive value.

33. Quoted by Pusey and Caldwell: "Therapeutics of Roentgen Ray," 609.

SCLERITIS AND EPISCLERITIS.

Pardo[22] in his long and interesting communication believes the results of *x*-ray in scleritis and episcleritis represent a real discovery inasmuch as at present there is no other direct therapeutic agent but only means amounting to a purely symptomatic treatment.

CORNEAL ULCERS.

Dennett[34] reports having observed that ulcers of the cornea are stimulated to rapid healing by the rays. Williams[34] reports a case of flat leucoma in the lower half of cornea. Exposures were given once a week for three months, then twice a week for two months, after which the scar was smaller, smoother, and less dense and vision improved.

UVEITIS.

Jackson[6] (Denver) is utilizing the rays in traumatic uveitis. Several times they have given immediate relief from pain and seemed to bring about rapid improvement. In other forms of uveitis he has not seen any marked effect from it.

TUBERCULOSIS OF CONJUNCTIVA.

Sidney Stevenson[35] reports the following case:

A poorly nourished, pallid child, aged 4, was placed under treatment November, 1902. Trachoma-like material was found in semilunar fold. Lid was half closed and thickened lower palpebral conjunctiva was strewn with miliary granulations and folds of coxcomb like tissue. Similar changes were in the superior retrotarsal fold. Tubercular bacilli were found locally. There were positive results from inoculation experiment. Thirteen *x*-ray exposures of ten minutes resulted in complete cure of the conjunctival disease. Enlarged submaxillary glands were present and were removed by operation.

CAUTION IN USE OF THE RAYS.

It is important that a note of warning should be sounded regarding the possibility of unlooked for results of a serious character which are said by competent observers occasionally to follow *x*-ray exposures. They would seem to indicate the very great importance of referring our cases to none but experts in Roentgen therapy. I have seen several cases of temporary corneal haze, conjunctivitis and marked episcleral congestion, but all such conditions subsided with the cessation in the use of the rays.

Dr. Henry K. Pancoast, chief of the *x*-ray department of the University of Pennsylvania, warns us regarding the possibility of the induction of severe conjunctivitis, ulceration and opacity of the cornea, edema of the conjunctiva and lids and optic neuritis. If the growth overlies the eyeball a hard rubber, ivory or metal eye spatula may be inserted under the lids.

In one of Sweet's cases of rodent ulcer the application of the rays was followed by the dulling of the mental faculties the following day. Wild reports a case of epithelioma in which the *x*-ray treatment was followed by the development of panophthalmitis, necessitating the removal of the globe. This must be regarded as a result so exceptional as to be unique.

Birch-Hirschfeld believes the rays capable of leading to very serious results if not skillfully applied. In his experiments on rabbits he believes he has certain proof of the existence of blepharitis with loss of hair and eyelashes, conjunctivitis keratitis profunda, and iritis. Some cases showed evidence of optic atrophy. The microscope in certain instances revealed degeneration of the ganglionic layer of the retina. In four clinical cases, marginal keratitis with vascularity was noted. These serious changes would seem to be the outcome of too lengthy exposures to the action of the rays. Indeed, Pusey of Chicago in one of his excellent early papers remarks on the possibility of producing atrophy of such highly differentiated epithelial structures as the retinal rods and cones, and regards the production of an inflammation of the conjunctiva as quite as likely as that of the skin structure. Hallopeau and Godaud[34] found the patient experienced a disagreeable impression of bright light after long exposure.

Subcutaneous extravasations of blood are said to have resulted in several instances, and Ehrmann quoted by Charles S. Bull described a telangiectatic appearance as a late result of *x*-ray exposure. A few cases of sarcoma and carcinoma by Burdick, Butler, Culey, Edwards and Pusey have been reported in which exacerbations of pain occurred as the result of the exposures.

CONCLUSIONS.

1. *X*-ray therapy marks a great advance in the treatment of superficial epithelioma and rodent ulcer of the eyelids and can usually be relied on to effect a cure.

2. If unsuccessful then electro-chemical sterilization may be utilized, or finally excision with or without plastic operation.

3. *X*-ray treatment has proven of value in the more extensive orbital carcinomata, but it is conceded that the deeper the growth the less favorable will be the result.

4. A sufficient number of cures of sarcoma of lids and orbit have been reported to warrant its exhaustive trial in all types of this disease. More radical operative procedures with subsequent ray applications being indicated in event of primary failure.

5. *X*-ray treatments usually exert an anodyn influence on malignant disease of the eyelids and orbit, but are occasionally reported to cause exacerbations of pain.

6. Noteworthy progress in the treatment of trachoma has been effected by the utilization of *x*-ray therapy. It should invariably be utilized if ordinary methods fail.

7. The weight of evidence indicates the positive value of *x*-ray treatment of vernal conjunctivitis.

8. There is evidence which points to the value of *x*-ray therapy in chronic conjunctivitis (Kassabian), scleritis, episcleritis (Pardo), traumatic uveitis (Jackson), conjunctival tuberculosis (Stevenson), corneal ulceration (Dennett), glioma (Hilgartner and Würdemann) and gummata (Parker).

9. It is believed that the rays will cure malignant disease involving the cornea and conjunctiva, provided treatment is applied sufficiently early.

10. The treatment of congenital nevi by the rays is likely to prove effective and should be exhausted before electrolysis or radical operation is considered.

11. Further testimony must be accumulated before an authoritative statement is possible of the effect of *x*-rays in painful types of iridocyclitis and glaucoma and other ocular diseases.

DISCUSSION.

DR. GEORGE S. DIXON, New York, said that we have been for some time, and are still, passing through the experimental stage of Roentgen therapeutics, and that the earlier and many of the later, ideas of the greatest number of workers in this line must be toned down considerably. So much is heard about the success, but nothing at all of the failures, as few men care to acknowledge defeat, and for this reason the time for judging the exact value of any therapeutic measure is delayed.

34. Quoted by Allen: "Radiotherapy in Ophthalmology."
35. Stevenson: "Tuberculosis of Conjunctiva," Boston Med. Jour., 1903, p. 1313.

Dr. Dixon said that his therapeutic use of the *x*-ray about the eye has been confined to the treatment of epithelioma, carcinoma, sarcoma and lupus. In epithelioma of the lids his experience has not been at all satisfactory. In cases in which the epitheliomatous growth was of the flat thin variety, not involving the deeper layers of the skin, the results were fairly good, but even after they had apparently been eradicated by the application of the ray they have recurred in from a few weeks to 13 months. In cases of epithelioma of nodular form, involving the deeper layers of the skin, and especially if they involved the deeper parts of the lid, the tarsus, for instance, the growths recurred rapidly after having been broken down and healed, or there was no benefit at all. In this connection he called attention to an interesting point, which he had not seen mentioned and which was discovered accidentally: In a patient with an epithelioma of the nodular form on the right lower lid, the growth was accidentally bruised while under x-ray treatment. Treatment was continued, and Dr. Dixon was rather surprised to find that the bruised portion of the tumor healed with remarkable rapidity, leaving a smooth scar with no trace of the growth beneath. This led to an experiment on the remaining nodules on the lid. By means of Knapp's trachoma forceps the remaining nodules were crushed. The lid is now almost well, though still under treatment.

In another patient, aged 44, with a tumor of the same character, the result was not so gratifying. The bruised tissue healed rapidly and a smooth scar resulted, but as rapidly as the tissue was broken down and healed the growth extended further into the surrounding skin, but not so rapidly nor so prominently as before. The invasion was probably inhibited by continued treatment. These two are the only cases in which Dr. Dixon has tried his method, and it is at least questionable whether or not it is good practice. He is inclined to think that the danger from metastasis may be considerable and probably outweighs any benefit that may be gained by crushing and healing the tumors in this manner. It has occurred to him that possibly the greatest value of the *x*-ray as applied therapeutically to the eye is in the treatment of extensive epibulbar epithelioma.

In two such cases the growth disappeared after about six months' treatment. The applications were made every other day with a medium low tube at a distance of nine inches, a Friedlander shield being used on the tube during all the exposures, which would average about seven minutes each. Periods of rest were occasionally allowed. In one case a new growth appeared suddenly in practically a new location and resisted the most persistent treatment. The *x*-ray had not the slightest effect on it and the man was finally discharged. A portion of the growth was excised for examination. Dr. Dixon hoped to find that it had reverted to papilloma, but it was still epithelioma.

In a case of recurrent carcinoma a small nodule was discovered in the orbit above the inner canthus. This is gradually becoming smaller, it can now just be felt and that is all. The case is still under treatment and there is no indication of recurrence. Dr. Dixon has treated a number of cases of sarcoma of the lid and orbit, and believes that the treatment of such growths with the *x*-ray is worse than useless because of the loss of valuable time. He has seen no beneficial result except a slight temporary decrease in the size of the tumors, and considerable amelioration of the pain, and he does not feel that the *x*-ray should be used except in inoperable cases. The only other affection about the eye which he has treated with *x*-rays is lupus vulgaris; it responds very readily. In reference to the remarks of Dr. Ring under the head regarding caution in the use of the rays, Dr. Dixon stated that it would seem that individual idiosyncrasy enters more largely into this question than the kind, condition or distance (of course excluding very short distances) of the tube or the intensity of the ray. He has had true conjunctival inflammation in but one case and he had not noted either visual or mental effects except that occasionally a patient will complain of slight vertigo immediately after treatment, but it soon passes off. He is inclined to believe that at least some of the untoward effects ascribed to the *x*-ray may have been mere coincidences.

Dr. W. F. Coleman, Chicago, stated that in his experience the use of the *x*-ray has been mostly in twelve cases of trachoma. There was recovery and for a year at least no recurrence. He said that exposure six inches from a low tube twice a week for ten minutes at a time does not entail any risk. In his earlier experiences he has had the hair entirely disappear but it recurred in six weeks; when this happens the patient has been over-rayed. Dr. Coleman agreed with Dr. Ring on the positive side of this therapeutic measure. The failures, he said, are apt to be due to faulty technic. Physicians may say that they have treated a patient, but without explaining in detail their methods the negative results are unreliable.

Dr. Charles S. Bull, New York, stated that he thinks he has been a little misunderstood as regards the value of the *x*-ray in cases of malignant disease. He thinks that it is a most important, perhaps the most valuable remedy we have in the treatment of superficial carcinomata. The deeper the disease becomes, the less value, in his opinion, is this treatment. In the inoperable cases of malignant disease of the orbit and sinuses this treatment is of great value in lessening the severe pain which does not return if the treatment is continued, but he has never seen any actual disappearance of recurring growths involving the sinuses, or in inoperable primary growths any beneficial results in the way of checking the disease. He is still hoping that as we learn more of the use of these rays we may yet get some hold on the deep sarcomatous tumors.

Dr. John E. Weeks, New York, mentioned the tolerance of the retina to the *x*-ray. In the case referred to by Dr. Dixon, the patient had a large number of exposures at a distance of ten inches from the anode of the *x*-ray tube and the retina has not been found in any way affected. Vision is just as good as when the treatment was begun. Dr. Weeks thinks that this is something that is well worth knowing.

Dr. Edward Jackson, Denver, in referring to the treatment of malignant disease, said that he has had one patient with recurrent epithelioma of the lid, recurring within a few months after excision, treated with the *x*-rays, that has now been free from evidence of disease for five years. But he thinks the cases that most strikingly illustrate the value of the method have been some unsuccessful cases, one in particular that has been under observation for five years, a carcinoma starting in the caruncle. It was excised when as large as the end of the little finger; and the pathologist reported that it was a malignant growth and would probably recur early. Only three weeks elapsed before it was evidently growing again. The *x*-ray was used, it checked the growth and led apparently to complete absorption. There remained a little nodular tissue in the scar. Dr. Stover, who applied the *x*-ray, thought there was no need to continue it further, but it was used a month or two longer. Then the ray was discontinued for six or eight months. During this time the patient was not under observation continuously and toward the end of the period the growth was evidently recurring. Treatment was resumed and the growth was again checked. Months later there was a slight increase in spite of the *x*-ray and again the tumor was excised. Again there was recurrence and the ray is still used. Dr. Jackson feels certain from watching the course of the case that the patient has lived three or four years longer than she would have lived without the employment of the *x*-ray and in complete comfort, so far as the pain is concerned. There is now quite a growth at the inner side of the eyeball. In another case in which caustics had been used and in which the eyeball was functionally destroyed, he enucleated the globe to get at the depth of the orbit. It was a slowly growing epithelioma said to have started at the inner canthus. It has now been about eighteen months since he saw the case. There is an opening into the ethmoid, lesions on the brow, and others about the ear. Several of these have healed completely and all apparently are shrinking. These cases, he said, strikingly illustrate the value of the *x*-ray. With regard to trachoma, he said that we can judge the value of any treatment by the mild cases. In the cases which have shown resistance to other methods the *x*-ray has not proven itself so good as older methods in his hands. He has tried it in several cases of vernal conjunctivitis, and, while it has produced comfort and sometimes temporary improvement, he thinks that as a cure it is worthless.

DR. A. R. BAKER, Cleveland, states that he has had a number of cases of epithelioma in which he thinks the *x*-ray has brought about recovery. He has seen several cases of sarcomatous tumors involving the sinuses in which there has apparently been no benefit, except in the relief of pain, except in one case of adenosarcoma involving the septum of the nose. He reported the case six years ago as recovered, but it recurred and an extensive operation was done, removing the growth and as much tissue as possible; in a few months there was recurrence involving the ethmoid and sphenoid sinuses. In consultation with some of the best surgeons it was decided that the case was an inoperable one, and it was turned over to an *x*-ray specialist and to the surprise of every one the patient recovered. That is five years ago and the patient is apparently enjoying good health now.

DR. JOHN GREEN, JR., St. Louis, said that he has recently had under observation a case which illustrates the partial failure of the *x*-ray. A woman, aged 65, was operated on about thirteen years ago for mammary cancer. Six years ago she developed a cutaneous ulcer over the right ala nasi, which increased in size and resisted caustic applications. Finally a series of *x*-ray exposures succeeded in controlling the disease at that site. About two years ago, the disease began at the inner third of the right upper lid. Dr. Green saw her first eighteen months ago at which time there was complete immobility of the lid, with destruction of a portion of the margin. He referred her to a competent *x*-ray therapeutist who instituted treatment. In the course of the thirty seances the tumor become so much smaller that the patient could voluntarily raise the lid. In the meantime, however, a nodule appeared at the upper inner angle of the orbit which increased in size despite continuous applications of the ray. Operation was advised but refused.

DR. CASEY A. WOOD, Chicago, added his testimony to that of Dr. Jackson's as to the value of the rays in the treatment of malignant tumors that are essentially fatal. He particularly referred to two he has had of secondary gliosarcoma following glioma of the retina. He had the usual experience in enucleating a number of eyes for this disease, but in one case he did an extensive evisceration and had the *x*-rays used afterward. In spite of the rays, however, the secondary tumor occurred as usual and came up to the margin of the orbit, but he was not called on for two years to do another operation, and he thinks that is of great importance. The value of the *x*-ray should not be forgotten in relieving pain and preventing the horrible edema. It helps along until the time when the meninges become affected and the patient dies from secondary invasion of the brain. If it does not cure it is at least of value as an agent of relief.

DR. C. D. WESCOTT, Chicago, referred to the case of sarcoma of the orbit mentioned by Dr. Ring in which the ray was used three months and the patient was living at the end of a year. He stated that the patient is still living at the end of three years. Dr. Wescott saw the patient about a year after enucleation of the eye for sarcoma. There was a good-sized tumor which he removed by subperiosteal exenteration. The actual cautery was used on the tissues which could not be removed with scissors and curette and then the patient was subjected to the *x*-rays for three months.

DR. W. B. MARPLE, New York, stated that he had one case of recurring sarcoma in which an exenteration of the orbit was done and subsequently the *x*-ray was applied to the orbital tissues. The result was entirely negative and the growth promptly recurred.

DR. WILLIAM SWEET, Philadelphia, said that he has had a number of cases of carcinoma, granular lids and vernal conjunctivitis, some of which recurred because the patients failed to return for treatment after the superficial ulcerated area had healed. Although the skin surface was completely healed, there remained a hardened mass at the site of the growth, showing that while the disease had been relieved temporarily, there were still some of the cancer cells deeply situated. In the treatment of sarcoma in the deep orbital structures Dr. Sweet said that we must not forget that active treatment without sufficient drainage is dangerous to the patient. The *x*-rays have a destructive action, and in extensive disease proper drainage must be provided, otherwise the system will be unable to elimate the broken-down tissue. Dr. Sweet has treated a number of cases of trachoma, but has failed to secure results sufficiently satisfactory to warrant the use of the rays in this disease. He has had three or four cases of vernal conjunctivitis, all of which were benefited by this treatment. One boy had typical granulations on the under surface of the lids and around the cornea. The surface of the lids became perfectly normal under the treatment and the granulations at the limbus decreased in size and number although they have not entirely disappeared.

DR. L. WEBSTER FOX said that since the *x*-ray plant has been established at the Medico-Chirurgical Hospital it is being used in all cases of superficial and deep growths in and about the eyelids and orbit. The first important case that was placed under such treatment was the one quoted by Dr. Ring. Since then there have been three similar cases with like results. The first evidence of benefit in these cases was the diminution in the size of the swelling and relief from pain. The first patient suffered so much that she was unconscious at times, and tetany was very pronounced. It was only with large doses of opium that rest and quiet could be obtained. After four or five applications of the *x*-ray the relief from pain and swelling was marked, and continued so throughout the treatment, until all swelling and pain disappeared. In that case, however, the patient has since had metastatic sarcoma of the liver, which caused her death. As regards the inoperable cases of sarcoma of the orbit, he said the *x*-ray should always be given a thorough trial. In the superficial cancers (the epitheliomata) the usual good results, ending in a cure have been obtained. Quite recently a case came under Dr. Fox's observation, in which two-thirds of the upper lid was destroyed. He scraped the tissues thoroughly and applied the *x*-ray for several weeks, by which time all evidence of induration had disappeared. Over this denuded surface he transplanted a flap of skin, which united perfectly. At the Medico-Chirurgical Hospital 100 cases of various inflammations of the lids from the dispensary were placed at the disposal of the *x*-ray therapeutist—the results were not satisfactory. Other means, such as grattage, sometimes bring about better results. Dr. Fox's method is to evert the lids and with a piece of ordinary gauze scrub the surface, and he thinks that the results are just as good, if not better, in the soft gelatinous papules as by any other method. He has at present an interesting case of leukosarcoma of the iris in which eight applications have been made and it looks as if the disease were slowly disappearing. If a cure can be brought about in this case it will be remarkable. Here one can observe the action of the *x*-ray directly through the transparent cornea on the growth which is now about the size and shape of a grain of wheat.

DR. C. L. LEONARD, Philadelphia, said that he is glad to note that the ophthalmologist appreciates the use of the *x*-ray and believes that it should be used by the *x*-ray therapeutist. If surgeons would appreciate that more and the medical men too they would secure better results. In the deeper growths one is able to secure perfect results. These results are coming, but they will only come with further development of technic, which we do not possess at the present time. We can hardly expect, he said, to reach the deep-seated growths that have already produced metastases. One *x*-ray specialist said that he does not consider a patient cured of malignant disease until he has died of something else and autopsy shows that the malignant disease is not there. Patients often remain apparently well for three or four years and then have recurrences. This method produces results not by removing diseased and normal tissue but by restoring the normal though altered metabolism. The cosmetic result is much better. One can not replace the hair follicles if they have been destroyed. Dr. Leonard has a patient now in whom the upper lid was more than half involved and the hair follicles were destroyed; the patient is well, but the hair can not be restored; otherwise the eyelid is like the other. Dr. Leonard agreed with Dr. Ring and Dr. Sweet that we must get rid of the broken-down tissues produced by the rays. The production of toxemia is proof of efficient treatment, but is also an indication for the cessation of treatment. The *x*-ray therapeutist learns that he must get near the production of that toxemia, but he must have

drainage for the byproducts caused by the destructive process. When this is done he is approaching as closely as possible to the destruction of malignant disease and restoration to normal. We are destroying the disease *in situ*. The work is not yet perfected and we must get better results, he said, before we speak of cures. In these deep-seated growths the relief afforded by the *x*-ray treatment is a blessing to humanity. Relief from pain in these cases is constant. The patient is free from suffering without the use of narcotics which destroy the sense of perception.

DR. D. L. EDSALL, Philadelphia, declared that he is so much impressed with the importance of recognizing the great potency for harm, as well as for good, in the *x*-ray, that he should desire to emphasize the point again. A year ago in reporting the first observations that he made on the effect of the *x*-ray on metabolism, he said that it is undoubtedly the most violent known agent used for therapeutic purposes, and that this demonstrates both great possibilities for good and great potentiality for harm. Since ophthalmologists do not purposely use the *x*-ray for its general effect on metabolism, the possibilities for harm are to them of more especial importance in this regard. As indicating such harmful possibilities, he would say that he has been so unfortunate as to see, in one of his own cases and in two cases of colleagues, violent general systemic reactions to a single application of the *x*-ray. Two of these cases soon ended fatally, largely as the result of the *x*-ray exposure; while the third patient became almost moribund, but finally recovered. The last case, he emphasized especially, for it was one of chronic rheumatoid arthritis in which the direct exposure was merely to one arm from the elbow downward and it was only five minutes in duration. There was no direct exposure of the trunk, although there was a distant diffuse exposure of the whole body, as the parts not purposely exposed were not protected from exposure. This shows clearly that a very mild exposure may have an exceedingly dangerous result. He emphasized also the fact that this patient was already somewhat ill from a chronic cystitis and that the clinician in charge of him, who is a very careful man, did not recognize that the severe illness following the exposure was due to the action of the *x*-ray. Dr. Edsall, however, feels confident that it was due to this, because in a previous observation he had noted exactly the same conditions of metabolism as those which appeared in this case, in a case in which there was certainly a general violent reaction to the *x*-ray. This demonstrates also, he said, what many persons have already come to admit: namely, that occasionally dangerous reactions occur as the result of exposure to the *x*-ray, and that their relation to the *x*-ray has in many instances been entirely overlooked. It is not at all surprising, he said, that violent toxic reactions may occur as the result of *x*-ray exposures. The observations that he has made show that one exposure, even, may double the metabolic output in the next few hours; and, clearly, the necessity for metabolizing and excreting such an amount of destroyed tissue must be dangerous in a good many instances. He said that he did not desire to arouse general opposition to the use of the *x*-ray. It has been too clearly shown that it is occasionally a therapeutic agent of great temporary, and perhaps of permanent, value, and is of unquestionable diagnostic importance. He would insist, however, on the importance of employing it for therapeutic or diagnostic purposes with less recklessness than has characterized its use by many of the profession hitherto. In cases such as ophthalmologists meet it is, as a rule, sufficient to protect all parts except those that are purposely exposed; but he considers that it is extremely important to do this, in order to avoid occasional dangerous general reactions, and even if toxic reaction does not occur, we should avoid giving an unnecessary general dose of an agent that always does more than merely take a picture or influence superficial lesions. In the cases that fall into the hands of the medical clinician, the matter is even more important. In such instances, Dr. Edsall believes that it is of great importance that the patient's general condition should be thoroughly known before referring him to the *x*-ray specialist; and a careful conclusion should be reached as to whether he is a proper subject to expose at all to the *x*-ray.

DR. G. O. RING, Philadelphia, said with reference to Dr. Dixon's remarks on the treatment of superficial epitheliomata that his own results were somewhat at variance, inasmuch as in all of his cases there had been complete and comparatively rapid cicatrization. He had no experience with the crushing of the nodules previous to the application of the *x*-ray. He felt that Dr. Coleman's experience in the treatment of trachoma was entitled to full consideration, as the technic had probably been faultless. He would unquestionably use the rays in any intractable case. He entirely agreed with Dr. Bull as to the present limitation of the ray treatment in deep seated carcinomata and sarcomata. He has had only two cases of sarcoma, one in which there was no recurrence in loco, and another which is now under treatment; the patient is doing well, the tumor being reduced about three-fourths. Dr. Ring has had only one case of sarcoma of the iris in which there was a question of diagnosis as to one of those rare forms of congenital syphilis, tuberculosis or sarcoma. It was treated with antisyphilitic remedies and with tuberculin without result. *X*-ray treatment was begun and carried on daily, and in three weeks the growths in the iris, which had been increasing, promptly began to disappear. Two of the original nodules could be watched through the clear cornea and have now practically gone, and the third is beginning to lessen. In confirmation of Dr. Weeks' observation on retinal tolerance to the *x*-ray, he had not seen any case in which the retina showed any untoward result. Dr. Ring expressed the hope that the brilliant result in Dr. Baker's clearly inoperable case involving the accessory sinuses might with perfect technic and exact dosage be the usual sequel to the application of Roentgen therapy. Dr. Ring said that it was his purpose in the opening of the discussion to have made reference to Dr. Zentmayer's case of vernal conjunctivitis. He gave the doctor credit with using the words "perfect cure" when he preferred the word "inhibited."

THE ECONOMIC ADVISABILITY OF INAUGURATING A NATIONAL DEPARTMENT OF HEALTH.*

J. PEASE NORTON, PH.D.
Assistant Professor in Political Economy, Yale University.
NEW HAVEN, CONN.

This is an age of progress, intellectual, social and, above all, material—of progress so colossal that the eternal forces of Nature are gradually abandoning the long fight and one by one surrendering to the mind and hand of man. But with all that has been wrought there yet remain broad gaps in our organization which, if left unheeded, may blight the civilization itself. In the present paper an attempt is made to point out what may be regarded as the most serious hiatus in our social system and to consider a possible remedy based on more efficient organization. Societies, like skillful capitalists, should strive to invest their revenues so as to yield maximum returns. When returns are direct and may be charged for, experience has shown that the management in many cases may be judiciously entrusted to private individuals. When social investments produce conditions rather than commodities, indirect services impossible to measure as they occur unit by unit, but which nevertheless result in large substantial gains measurable in the aggregate, the management must be entrusted to national agencies, sufficient in magnitude to produce the results desired.

In an age of great things, a civilization must not be staggered by its own creations. Greater and greater things must it do because of the necessity that compels it. To falter is to lose grip, and to lose grip means a more or less slow destruction of the civilization by divers melancholy wastes.

*Read before the American Association for the Advancement of Science, Ithaca, N. Y., June 30, 1906.

The salvation of the civilization and of the race lies in the hands of exceptional men. The hope of the race rests in its efficient organization for action. Efficient organization consists in compelling each individual to do that thing within his capability which has greatest value for society. To do otherwise is a great waste. To permit great wastes to go unchecked is more than a suicidal policy; for an evil more destructive than race suicide is race homicide.

There are four great wastes to-day, the more lamentable, because they are unnecessary. They are preventable death, preventable sickness, preventable conditions of low physical and mental efficiency and preventable ignorance. The magnitude of these wastes is testified to by experts competent to judge. They fall like the shades of night over the whole human race, blotting out its fairest years of happiness.

The facts are cold and bare—1,500,000 persons must die in the United States during the next twelve months; equivalent to 4,200,000 persons will be constantly sick; over 5,000,000 homes, consisting of 25,000,000 persons, will be made more or less wretched by mortality and morbidity.

We look with horror on the black plague of the middle ages. The black waste was but a passing cloud compared with the white waste visitation. Of the people living to-day over eight millions will die of tuberculosis, and the federal government does not raise a hand to help them.

The Department of Agriculture spends seven million dollars on plant health and animal health every year, but, with the exception of the splendid work done by Doctors Wiley, Atwater and Benedict, Congress does not directly appropriate one cent for promoting the physical well-being of babies. Thousands have been expended in stamping out cholera among swine, but not one dollar was ever voted for eradicating pneumonia among human beings. Hundreds of thousands are consumed in saving the lives of elm trees from the attacks of beetles; in warning farmers against blights affecting potato plants; in importing Sicilian bugs to fertilize fig blossoms in California; in ostracizing various species of weeds from the ranks of the useful plants, and in exterminating parasitic growths that prey on fruit trees. In fact, the Department of Agriculture has expended during the last ten years over forty-six millions of dollars. But not a wheel of the official machinery at Washington was ever set in motion for the alleviation or cure of diseases of the heart or kidneys, which will carry off over six millions of our entire population. Eight millions will perish of pneumonia, and the entire event is accepted by the American people with a resignation equal to that of the Hindoo, who, in the midst of indescribable filth, calmly awaits the day of the cholera.

During the next census period more than six million infants under 2 years of age will end their little spans of life while mothers sit by and watch in utter helplessness. And yet this number could probably be decreased by as much as one-half. But nothing is done.

In the United States alone, of the eighty millions living to-day, all must die, after having lived, say, a little more than 3,200,000,000 years of life, on the average slightly more than two score years. Of these years, 1,600,000,000 represents the unproductive years of childhood and training.

Consider that the burden of the unproductive years on the productive years is 20; 20, or say 100 per cent. Could the average length of life be increased to sixty years, say to 48,000,000,000 years lived by 80,000,000 of people, the burden of the unproductive years would fall to 50 per cent. In the judgment of men competent to hold opinions, this is not impossible.

The states' rights doctrine can be applied against the Department of Agriculture as effectively as against a national department for health. It is not, then, a question of constitutionality, but, rather, of whether or not such a department is needed by the nation.

The idea is by no means a new one. As far back as 1879 Dr. Benjamin Ward Richardson advocated by articles and books the establishment in Great Britain of a ministry of health. Solvay, in Belgium, has emphasized the importance of this field for government action. Sir Francis Galton, in recommending the study of the new science of eugenics, created by his own investigations, holds that the laws now being worked out by the brilliant group of mathematical biologists in England bearing on such subjects as heredity or homotyposis, reproductive selection, inheritance of longevity and mental traits, and disease causation, should become the basis of constructive action by the state. And this point of view has been the subject of much discussion at the meetings of the British Sociological Society.

Two years ago, an interdepartmental committee was appointed by the British parliament under these terms of reference: (1) "To determine the steps that should be taken to furnish the government and the nation at large with periodical data for an accurate comparative estimate of the health and physique of the people; (2) to indicate generally the causes of such physical deterioration as do exist in certain classes, and (3) to point out the means by which it can be most effectually diminished."

The committee returned a report recommending a permanent advisory council, in substance a national department of health, along with fifty-two other constructive measures.

In America, physicians connected with the American Medical Association for a number of years have advocated that the executive cabinet include a secretary of health. The necessity for such a department has also arisen in connection with the Panama Canal. Indirectly, two medical experts are now associated with the canal organization. In 1906, Mr. Hubert Higgins, in a book entitled "Humaniculture," elaborated the advantages and necessity for national action through a thoroughly equipped national department of health. The recent book by Dr. Shadwell, a physician, on "Industrial Efficiency" tends to the same conclusions.

Certain divisions of the work of such a department are now performed by other executive departments, and these bureaus would form excellent nuclei for the organization. The names of those bureaus now engaged to some extent along lines not foreign to the purpose of such a department and their appropriations follow:

Public Health and Marine-Hospital Service (Treasury Department)	$1,290,000
Bureau of Animal Industry for the Inspection of Meat (Department of Agriculture)	1,525,000
Life-Saving Service (Treasury Department)	1,841,000
Total	$3,656,000

The logic that justifies an annual appropriation of $2,000,000 for a life-saving service against the accidents of the sea should justify protection against accidents of disease and death. Other bureaus more closely connected with health regulation than at first sight appears are:

Bureau of Labor (Department Commerce and Labor)	$ 176,000
Bureau of the Census, vital statistics (Department Commerce and Labor)	1,400,000
Bureau of Immigration (Department Commerce and Labor)	2,126,000
Total	$3,713,000

Agitation for the factory acts, the eight-hour day, regulations concerning female and child labor and immigration is justified primarily as health regulation.

The total is, in round figures, seven millions out of a total national expenditure of about $725,000,000. These bureaus should be included in the work of the health department. Many other services, however, should be added, the beginnings of some of which appear in recent bills either passed or now before Congress.

Among these bills is the Meat Inspection Bill, which provides rigid inspection of meat and meat products and regulates the sanitation of slaughter and packing houses. These regulative powers are entrusted in the bill to the Department of Agriculture, which is unfortunately already overburdened with a too diverse series of problems. Moreover, this department is necessarily more concerned with encouraging and protecting the producers in the various industries than in guaranteeing the health of the consumer. Commercially, the interests of the producers and consumers are often at variance. This service should be administered by a national department of health.

The National Quarantine Law recently passed forms the basis for a bureau of national quarantine.

The Pure Food Law provides for the rigid inspection of food and food products, as well as drinkables and medicines. Severe penalties are imposed for adulteration and false labelling. This bill extends federal powers into affairs with which the states have dealt very generally with laxity. The grave danger in state regulation lies in the strong tendency to use these laws indirectly as a protective measure against the products of other states.

There must arise many differences of opinion with respect to the practicable division of powers in the organization of a national department of health. An organization is suggested in the following paragraphs, not for the sake of occasioning argument over details which would necessarily be the subject of careful investigation, but in order to present positive prolegomena for discussion:

1. It seems desirable that a United States National Department of Health should be established, having as its head a secretary, who shall be a member of the executive cabinet.

2. The purpose of the department should be to take all measures calculated, in the judgment of experts, to decrease deaths, to decrease sickness, and to increase physical and mental efficiency of citizens.

3. It is probable that a national department of health could be advantageously made to consist of the following bureaus:

National Bureau of Infant Hygiene.
National Bureau of Education and Schools.
National Bureau of Sanitation.
National Bureau of Pure Food.
National Bureau of Registration of Physicians and Surgeons.
National Bureau of Registration of Drugs, Druggists and Drug Manufacturers.
National Bureau of Registration of Institutions of Public and Private Relief, Correction, Detention and Residence.
National Bureau of Organic Diseases.
National Bureau of Quarantine.
National Bureau of Health Information.
National Bureau of Immigration.
National Bureau of Labor Conditions.
National Bureau of Research, requiring statistics.
National Bureau of Research, requiring laboratories and equipment.

4. At the present time of vast undertakings, the magnitude of this department should not be lightly passed over. Great ends must be wrought out through adequate organization. To make headway against death, morbidity, cancer, tuberculosis, we must use dynamite and in large charges.

To equip human machinery, consisting of exceptional men, organized and kept in action for this task, with suitable apparatus and adequate supplies, at least one hundred millions of dollars should be annually appropriated by the nation.

5. The health department should receive its support:

(a) From licenses levied on persons and industries inspected, stamp taxes and registration fees.

(b) From national appropriations.

6. The scope of the work of the fourteen bureaus is briefly discussed in the following paragraphs. The organization is framed from the standpoints of (1) economy of operation, (2) effectiveness of administration, (3) adequacy of results. It is, of course, out of the question to attempt to give specific reasons for each bureau in the space allotted:

A. Bureau of Infant Hygiene.—This bureau should investigate and regulate conditions causing infant mortality. Registration of births and marriages would enable wholesale education of parents by means of pamphlets and leaflets concerning the care of the child, food, air, dress, etc., such as the model pamphlets of the Illinois Bureau of Health. Continuation classes and education of older girls in schools, as well as regulation of female employment during and after pregnancy, are recommended by the British committee; also medical certificates as to the cause of death and registration of still births. The establishment of municipal milk stations now going on in European cities should be adopted. The famous Randall's Island experiment, where sterilized milk feeding reduced infant mortality from 41.83 per cent. in 1895-7 to 16.52 per cent. in 1904, is pertinent. McCleary estimates for eleven European cities a decline from an average of 20.2 per cent. to 18.3 per cent. by partial use of municipal milk depots. The work of Dr. Goler, of Rochester, is still more striking. The damage wrought by impure milk, soothing syrups and parental ignorance is probably equivalent to a decrease of several years in average age at death of the entire population.

B. Bureau of Education, Schools and Children's Homes.—This bureau could coöperate with the local schools in (1) medical inspection of children and anthropometric measurements, (2) extension of the New York system of disease examination by permanent nurses, (3) municipal treatment of defective eyes, ears, teeth and segregation of defective children, (4) inspection of buildings used and methods of schools, children's homes, etc., from sanitary and educational standpoints, (5) systematic education of children in right living along practical lines.

C. National Bureau of Labor Conditions.—This bureau should investigate and frame legislation for proper conditions under which labor may be employed. The excellent work already being done by the present Bureau of Labor should be expanded. The length of the working day, hours of rest, etc., should have more attention, and proper regulations should be enforced.

D. Bureau of Sanitation.—The subject of sanitation

and ventilation should be very thoroughly investigated, with a view to establishing standards (1) for sewerage systems of cities and towns; (2) water supply; (3) air purity, by regulating smoke and chemical pollution; (4) proportion of building and open spaces in cities; (5) condemnation of insanitary and overcrowded house property; (6) regulation of the dust danger in cities; (7) standards for factories and mines; (8) standards for public halls, theaters and public conveyances with inspection; (9) standards of sanitation for farms where dairy products are sold; (10) adequate legislation and inspection to enforce proper regulations, and wide dissemination of useful information.

E. Bureau of Pure Food.—This bureau should provide (1) standards of purity for all foods and drinkables, (2) meat and animal inspection. The beginnings of this bureau are in the Pure Food and Meat Inspection bills, now in course of agitation.

F. Bureau of National Quarantine.—The National Quarantine Act recently passed forms a precedent for such a bureau; also work done by the Public Health and Marine-Hospital Service. An appropriation of $200,000 is, however, entirely inadequate. This bureau should (1) provide means for handling epidemics with speed, (2) regulate quarantines against infectious diseases, (3) study and devise means of handling diseases transmitted by insects.

G. Bureau of Registration of Physicians and Surgeons.—This bureau should have power to require (1) that all colleges educating physicians and surgeons be under national inspection as to curriculum and training; (2) that all physicians and surgeons be required to be registered; (3) that returns be made by physicians and surgeons of records of all cases, on official blanks, showing on analysis by the department statistical records, such as average visits per illness, cases per death, etc.; that returns be made by physicians and surgeons of all organic or chronic diseases for use of the Bureau of Organic Diseases; (4) that licenses be issued barring general practitioners from treating special diseases requiring skill above that evidenced by training; (5) that the standard of the profession be raised by protecting the exceptional men and barring quacks, charlatans, etc.

H. Bureau of Registration of Druggists, Drug Stores and Manufacturers of Drugs.—This bureau should have the necessary powers (1) to regulate the standard of drugs, and to require drugs to be sold, as far as possible, in unbroken packages under seals; (2) to regulate "patent medicines" by requiring contents printed on labels, under government stamp, and severely punishing both newspapers and manufacturers for the insertion of false or fraudulent advertising matter calculated to deceive the public; (3) to regulate preparations of prescriptions by doctor and druggist, by fixing standards, and by summarily punishing substitutions; (4) to maintain competent inspectors and to enforce such regulations as shall accomplish the results; (5) to prepare and to furnish druggists, doctors, etc., with a weekly or monthly bulletin containing orders and instructions in a systematic educational campaign.

I. Bureau of Registration of Institutions of Public and Private Relief, Correction and Detention.—This bureau should investigate conditions in institutions and establish standards. The inmates should be the subject of experiments in diet, hygiene, sanitation, etc., and also of statistical inquiry. The census has recently issued a bulletin in this field.

J. Bureau of Immigration.—This bureau should include in addition to the present service, provisions for the study of races, desirable immigration, mixture of races and also distribution locally.

K. Bureau of Organic Diseases.—The data returned by physicians in compiling notifications concerning chronic and organic diseases with history should be a field for study. Means should be taken educationally (1) to ameliorate and advise by pamphlets; (2) to follow up and to study for causes and remedies; (3) to furnish practitioners with directions for treatment. Dr. Solis Cohen estimates that consumptives alone now number not fewer than 1,000,000. The importance of the work can not be overestimated.

L. Bureau of Health Information.—This bureau should adopt methods used by the Department of Agriculture, the follow-up pamphlet, etc., with a view to disseminating reliable information couched in plain language concerning right living as widely and as thoroughly as possible.

M. National Bureau of Research Requiring Statistics.—In human beings differences in habits are probably more important than difference in physical characters in determining the optimum health, and in warding off morbidity and mortality, as well as criminality. Habits should be investigated to a far greater extent than they have been hitherto. The highly exact methods of statistical analysis, involving the theories of variation, correlation and regression, should be applied to this field on a large scale. Such questions as the correlation of food habits and alcoholism with mental and physical efficiency, value of foods experimentally determined by results in connection with mental and physical efficiency rather than by laboratory theories, effects of longer or shorter labor day on efficiency, correlation of the number of open windows and cases of sickness, etc. Such questions of vital interest can be determined to a finality by the new statistical analysis. The opportunity presented by the possibility of experiment with the diet of the Army, the Navy, the inmates of houses of detention and correction, should not be lost. The preparation of all blanks in use by all other departments should be subject to the approval of this department, which should have at its head exceptional men. The vital statistics of the census should be managed by this bureau. The necessity for experts of the highest order is discussed in a subsequent section.

N. National Bureau of Research Requiring Laboratories and Apparatus.—This bureau should endeavor systematically to extend knowledge of remedies for the deadly diseases which may be advantageously pursued by laboratory methods.

The organization in vogue among modern business corporations and the practice of playing off against each other several experts engaged in independently solving the same problem should be adopted. That which can be accomplished through the organization of the world's exceptional men under the lash of failures and stimulus of great rewards is of vast magnitude.

The vital problem for the Department of Research is to make new discoveries of value at a rapid rate. New discoveries or inventions in general depend on the number of exceptional men in a society capable of such work. Exceptional men are in degrees as one in a thousand, one in a million, an Edison, one in two hundred million of a population. An art discovered by one such man becomes operative for an entire population. The necessity of employing experts can not be overemphasized. The possibilities of a civilization efficiently

administered by exceptional men practically renders negative the evils of the Malthusian theory.

1. The greater the population the greater the number of exceptional men of all degrees, since exceptionality depends on a ratio to the total population.

2. The value of the work of a given exceptional man capable of producing an invention, depends on the value of the invention to the average man who uses it, multiplied by the number of users, who are in ratio to the total population.

3. Two results emerge: (a) The value of the work of an exceptional man increases directly with the growth of the population. (b) Society gains greatly through the increase in its numbers, since every member of the population on the average is served by all of the exceptional men. The value of the work of a Luther Burbank, an Edison or an Eli Whitney is incalculable.

From the standpoint of eugenics, it is desirable: (1) To select as early as possible the exceptional minds; (2) to afford these minds every opportunity of training and education; (3) to place them in operation where their exceptionality may prove advantageous to society; (4) to place in operation instantaneously the results of their work. How large are the appropriations now made for the defective children who must forever be a burden on society. How little has been done for the exceptional children who must carry by their work both the defective and the average of the population. Professional organizers understand the importance of this phase, Carnegie in his libraries and institutes, Rockefeller in the Rockefeller Institute and Chicago University. *A fortiori* the nation should provide for this necessity.

The economic reasons for establishing a National Department of Health are five:

1. To enable society to progress more rapidly under the law of increasing returns through increasing the percentage of exceptional men of each degree (many of whom are now lost through preventable accidents), in addition to increasing the total population.

2. To lessen the burden of the unproductive years on the productive years by increasing the average age at death. If we estimate the average span at 40 years, and 20 years as unproductive, the ratio of unproductive to productive years is 100 per cent. Without venturing an opinion as to the true figures after the manner of La Place, I have calculated what would be the economic gain if average span were 40, 45, 50 and 55 years and also the burden of an unproductive year at $100 and $200. The annual gains are shown under the various hypotheses. Thus if the average life-span of a class of the population can be increased from 40 to 45 years, the economic gain would be $25 to $50 per head. Assuming 40,000,000 of productive age in the United States, the burden of the unproductive years of childhood, lightened by an increase in the average life span, from 40 to 45 years would be $800,000,000 to $1,600,000,000 per annum, and an increase of ten years would result in savings of $1,320,000,000 to $2,640,000,000 per annum.

BURDEN OF UNPRODUCTIVE YEARS ON PRODUCTIVE YEARS.

Average span of life in years	40	45	50	55
At $100, per cent	100	80	67	57
Measured in dollars, per capita..	$100	$ 80	$ 67	$ 57
Gain for period		20	13	10
Total gain		20	33	43
At $200	200	160	134	114
Gain for period		40	26	20
Total gain		40	66	86

3. The third economic reason for establishing a department of health is to decrease the burden of death on the productive years by increasing the age at death. If the expense of illness and death are $300, and the average age at death is 40 years, the average death expenses average $15 on the twenty productive years. Could the average age be increased to 50 years, the burden falls to $10, or a decrease of 50 per cent. For 80,000,000 of people, the saving of $1.50 per year of life would be equivalent to $120,000,000 per annum.

4. The fourth object of the plan would be to lessen the economic burden of sickness. Assuming Newholme's figure of 9 days' average illness per annum, approximately 2,000,000 years of life are lost per annum. Estimating wages at $1 a day, and all other expenses $1 a day, $1,444,000,000 loss per annum is registered by this item. Could the days of illness be cut down one-third, nearly $500,000,000 would be saved.

5. Higgins has estimated that six hundred millions are now spent on criminality in the United States. If the criminality is largely the product of the social environment, such as overcrowding, alcoholism, etc., measures which would decrease this only fractionally are worthy of consideration. A decrease of 16 2/3 per cent. would result in savings of $100,000,000 per annum.

For the last four estimates the total savings range between $1,800,000,000 and $4,000,000,000 per annum.

In addition to the economic gain, the establishment of a National Department of Health would gradually but surely diminish much of the misery and suffering that can not be measured by statistics. Sickness is a radiating center of anxiety; and often death in the prime of life closes the gates of happiness on more than one life. Let us not forget that the "bitter cry of the children" still goes up to Heaven and that civilization must hear, until at last it heeds, the imprecations of forever wasted years of millions of lives.

If progress is to be real and lasting, it must provide whatever bulwarks it can against death, sickness, misery and ignorance; and in an organization such as a National Department of Health—adequately equipped—a vast preventive machine—working ceaselessly, an attempt at least would be made to staunch those prodigal wastes of an old, yet wastrel world.

HYPERSUSCEPTIBILITY.*

M. J. ROSENAU, M.D. AND JOHN F. ANDERSON, M.D.
Director and Assistant Director, respectively, of the Hygienic Laboratory, United States Public Health and Marine-Hospital Service.
WASHINGTON, D. C.

(Abstract.)

The phenomenon of hypersusceptibility has long been recognized, but has been overshadowed in modern studies on immunity. Instances of hypersusceptibility to certain infectious diseases, bacterial toxins and other substances may be found scattered through the literature. The well-known hypersusceptibility to tuberculin in animals infected with tuberculosis has received much attention, but the importance of hypersusceptibility in general pathology has not been realized.

At first glance it would appear much more important for an organism to be *hyposensitive* than *hypersensitive* to infectious processes, but a closer study of the com-

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

plex problems of immunity develops the curious fact that resistance to disease may be largely gained through a process of hypersusceptibility. Whether this increased susceptibility is an essential element or only one stage in the process of resistance to disease must now engage our attention.

Von Pirquet and Schick[1] believe the immunity which an organism acquires after an attack of measles, whooping cough, etc., consists in the power of "immediate reaction;" that is, a condition of hypersensitiveness. This immediate reaction is an expression of cellular resistance rather than humeral or antitoxic immunity.

Our studies[2] on the hypersusceptibility produced in guinea-pigs by the injection of horse serum have a direct bearing on this question. We have shown that these animals may be rendered acutely sensitive to a substance which is incapable in itself of producing apparent harm.

HYPERSUSCEPTIBILITY TO HORSE SERUM.

It has long been known that the blood of certain animals is poisonous when transfused or injected into certain other species. Many instances might be cited showing that the blood serum of one animal has poisonous properties when injected into an animal of another species. But the blood serum of the horse apparently lacks such poisonous action. Very large quantities of the blood serum of the horse may be injected into man, rabbits, guinea-pigs, and many other animals without serious inconvenience, except occasionally a slight reaction at the site of inoculation. In a certain proportion of cases the injection of horse serum into man is followed by urticarial eruptions, joint pains, fever, swelling of the lymph nodes, edema, and albuminuria. This reaction, which appears after an incubation period of 8 to 13 days, has been termed by Pirquet and Schick the "serum disease." In exceptional instances sudden death has followed an injection of horse serum in man.

These studies were taken up in October, 1905, by one of us (Anderson), in order to throw light on the cause of this unfortunate accident. We have shown that ordinarily horse serum is a comparatively bland and harmless substance when injected into certain animals; but these animals may be rendered so susceptible that an injection of horse serum may produce sudden death or severe symptoms. For example, large quantities of horse serum may be injected subcutaneously or into the peritoneal cavity of a guinea-pig without apparently causing the animal the least inconvenience. But if a guinea-pig is injected with a small quantity, say .004 c.c., of horse serum and after the expiration of a certain interval is again injected with horse serum the result is usually fatal. The first injection of horse serum has sensitized the animal in such a way as to render it very susceptible to a toxic principle in horse serum. It is probable that when the guinea-pig is injected with the first, or sensitizing quantity of serum the strange proteid contained in the horse serum develops in the body of the guinea-pig "antibodies" which, when brought into contact with more horse serum given at a second injection, produce either a union or reaction, which causes the toxic action. A certain time must elapse between the first and second injections of horse serum before this toxic action is able to manifest itself. This "period of incubation" is from ten to twelve days, and corresponds suggestively with the period of incubation of the serum disease which Pirquet and Schick place at eight to thirteen days.

Guinea-pigs may be sensitized with exceedingly small quantities of horse serum. In most of our work we used quantities less than .004 c.c. and we found in one instance that .000,001 c.c. of horse serum was sufficient to render a guinea-pig susceptible. It also requires very small quantities of horse serum, when given in a second injection, to produce poisonous symptoms. The injection of 1 c.c. into the peritoneal cavity is sufficient to cause the death of a half-grown guinea-pig. The injection of .1 c.c. of horse serum subcutaneously is sufficient to produce serious symptoms. The fact that this toxic action may be developed by such small quantities of serum and the fact that exceedingly small quantities are sufficient to produce symptoms and death on a second injection, and the further fact that an immunity may be produced against this toxic action, *a priori*, places both the sensitizing and the toxic principle in the horse serum in the "hatpin group" of substances in the sense used by Ehrlich.

While at first we thought that diphtheria antitoxin had some relation to this action, we are now able to state positively that it has nothing whatever to do with the poisonous action of horse serum; further, that diphtheria antitoxin in itself is absolutely harmless. The toxic action which we have studied is caused by a principle in normal horse serum and is entirely independent of the antitoxic properties of the serum.

The chemical and vital processes of the body must be delicately balanced when we consider that the introduction into the system of a small quantity of horse serum is sufficient to break the compensation in such a way that the subsequent injection of the same substance is capable of producing sudden and serious symptoms. This remarkable phenomenon must increase our wonder of the manifold and mysterious vital phenomena which constitute life, and accentuate our ignorance of many of its fundamental processes.

An active immunity against this toxic principle may readily be established by repeated injections of horse serum, at short intervals, into a guinea-pig. Although guinea-pigs may be immunized actively in this manner, we have not yet succeeded in transferring this immunity in the blood serum or body juices to another guinea-pig. It, therefore, appears that the immune bodies, if such exist against the toxic action of horse serum, are not free in the blood and body juices contrary to the case in diphtheria.

Guinea-pigs may be sensitized to the toxic action of horse serum by feeding them with horse serum or horse meat. The fact that guinea-pigs may be rendered susceptible by the feeding of strange proteid matter opens an interesting question as to whether sensitive guinea-pigs may also be poisoned by feeding with the same serum given after a proper interval of time. If man can be sensitized in a similar way by the eating of certain proteid substances may not this throw light on those interesting and obscure cases in which the eating of fish, sea food and other articles of diet habitually causes sudden and sometimes serious symptoms?

The susceptibility to the toxic action of horse serum is transmitted from the mother guinea-pig to her young. These results on the hereditary transmission of the susceptibility to the poisonous action of horse serum in

1. Von Pirquet, C. F., and Schick, B.: Die Serumkrankheit, Leipzig, 1905, p. 144.

2. Rosenau, M. J., and Anderson, John F.: "A Study of the Cause of Sudden Death Following the Injection of Horse Serum," Bulletin 29, Hygienic Laboratory, U. S. Public Health and Marine-Hospital Service, Washington, April, 1906, p. 95.

guinea-pigs may throw light on the well-known hereditary tendency to tuberculosis in children born of a tuberculous parent. There are certain analogies between the action of tuberculosis and horse serum. Both may produce a hypersusceptibility and also a certain degree of immunity. Now that we have proved this hypersusceptibility or anaphylactic action in the case of horse serum may be transmitted hereditarily in guinea-pigs, may it not throw light on the fact that tuberculosis "runs in families?"

Demonstrations of the hereditary transmission of acquired characters are comparatively rare in biology. While there are several recorded instances demonstrating that immunity to certain infectious diseases may be transmitted from a mother to her young, yet, as far as we know, this is the first recorded instance in which hypersensitiveness, or anaphylaxis, has been experimentally shown to be transmitted from a mother to her young.

It may be that man can not be sensitized in the same way that we have shown to be the case with guinea-pigs. In a number of instances children have been injected with antidiphtheric horse serum at short and long intervals without, so far as we are aware, causing death. Certain serums, for example, the antitubercle serum of Maragliano and the antirheumatic serum of Menzer, are habitually used by giving injections at intervals of days or weeks. In all such cases of frequent and repeated injections the amount which has been injected and the interval between the injections must be taken into account in relation to our work. Von Pirquet and Schick have shown that a second injection of horse serum into children causes an "immediate" or an "accelerated" reaction. Both the immediate and the accelerated reaction in children are characterized by symptoms of the "serum disease."

We might conclude that children may not be sensitized to the toxic action of horse serum by eating horse meat, for horse meat is a favorite article of diet in certain European countries and there is nothing on record to show that the injection of horse serum in those countries is fraught with more danger than where this diet is not used. It should be borne in mind that our work has shown that guinea-pigs may be sensitized with exceedingly minute quantities of a strange proteid, and that repeated injections cause an immunity, and it does not seem impossible that the same action may be true of food.

Man reacts to the first injection of horse serum after a period of 8 to 13 days; guinea-pigs show no reaction as a result of the first injection; both man and guinea-pigs react to a second injection. The reactions in man and the guinea-pig differ both in severity and in kind. The relation, therefore, that our observations on the guinea-pig may have in their application to man must await further study. The fact that other animals beside man and the guinea-pig react to a second injection of horse serum would seem to indicate that we are dealing with one and the same action.

We believe that our results make it probable that man may be rendered sensitive to the injection of a strange proteid, as is the case with the guinea-pig and other animals, and that this explanation must be considered as well as the *status lymphaticus*, which has heretofore been assigned as the cause of sudden death following the injection of horse serum.

Our studies do not detract from the great usefulness of diphtheria antitoxin. This sovereign remedy, when used early in the disease, decreases the death rate to almost *nil*. We can not be blind to certain inconveniences and occasional dangers in the introduction of horse serum into the system, but the benefits far outweigh the dangers. In view of these facts we are now engaged in refining diphtheria antitoxin in an attempt to eliminate this undesirable principle present in the horse serum.

DISCUSSION.

DR. V. C. VAUGHAN, Ann Arbor, Mich., said that for a number of years he had been at work at poisons from bacterial cells, albumin, peptones, etc. Dr. Rosenau showed him some of his guinea-pigs inoculated with the second horse serum. They die almost exactly as Dr. Vaughan's guinea-pigs die with the isolated poison, but there is apparently this difference: With isolated poisons there is a rapid fall in temperature, and Dr. Rosenau made an experiment on one guinea-pig which practically died at the time, and there was no fall in the temperature. Every protein molecule has a poisonous group. With all the proteids he has worked with, this poisonous substance was found and has a benzine ring in it, gives the Millon test and, on being broken up with strong acids, characteristic reactions followed. This substance is a chemical nucleus of the molecule. He believes that life is molecular and that in the living cell the side-chains are the receptors. They are the side-chains which feed and break up the pabulum which comes in contact with the living cell. Oxygen is taken on and this is converted into CO_2. This is the normal metabolism. The relative distances between the atoms in the molecule are as great as the distances between the planets of the solar system. When one group gets over into range with another group and combines with it, it forms water and carbonic acid gas. That is the normal way in which the cell functionates. There is no other possible explanation of the way in which a cell feeds. By heating albumin, bacterial cells, etc., the proteid molecule is split up from the food receptors. That is the center of chemism. Dr. Vaughan thought that if Dr. Rosenau will take these proteids in the blood serum and heat them there is no doubt that he will split off this body. It is very stable. Dr. Vaughan has kept solutions for two years. They have decreased in toxicity. There is no carbohydrate in the chemical nucleus of the molecule. That is, in the side-chains which are split off. It is readily soluble in alcohol. He would call it albuminose, which is different from the ordinary albuminoses. The Rosenau-Anderson phenomenon may be explained on the ground that when you first inject the horse serum the cells of the guinea-pig split up the proteid molecule. Why doesn't the first injection kill? Because the cells of the animal body split up this substance slowly. The same is true of the isolated poison, as has been demonstrated time and time again by using many times the fatal dose. If you will take a rabbit and make him fast several days, then fill his stomach two or three times with the fatal dose, it will not kill. The poison is diffused. Now when he injects his horse serum the first time the cells of the guinea-pig decompose that proteid molecule, but so slowly that the poison which is set free has no appreciable effect on the animal. If he makes his injections every day he establishes a tolerance for the poison, so that after ten days he can inject without any effect, but when he waits ten days the cells tear the molecule to pieces quicker than before, this sets the poisons free quicker and the animal dies. Dr. Vaughan said that this is his present idea. It may be altogether wrong, but there is a wonderful field here for research. He is very certain that the phenomenon has a very direct relation to the work he has been doing, because the symptoms which he has produced are the same, unless it be on the point of temperature. He is sure Dr. Rosenau will find that when he isolates this substance it will resist up to 100 degrees. It will not do it as long as it is in the proteid molecule. The results come from the tearing off of side-chains from body cells, side-chains the functioning of which is necessary for the maintenance of life, and if one injects it directly into the blood it will kill in a few seconds or minutes, and if in the peritoneal cavity in a half-hour or so. He hoped more would take up this work.

DR. G. F. RUEDIGER, Chicago, said that about a year ago he was approached on this subject of untoward symptoms following the use of antitoxin by the representative of a manufacturer of antitoxin, who showed letters indicating that the writers got their most serious results after several injections had been given. From the reports in the literature he came to the same conclusion mentioned by Dr. Rosenau: that is, that many of the most alarming symptoms are observed after the first injection. The letters showed, however, that these doctors got very alarming symptoms, with collapse in some instances, after several injections had been given and not after the first injection. These reports are not published, as a rule.

DR. THEOBALD SMITH, Boston, said the subject had interested him since 1902, although no special effort has been made to analyze the phenomenon. He remarked that guinea-pigs which have received no preliminary doses of serum may die and that of those which have received a fairly large dose of serum at the outset nearly all are thereafter immune. The problem, therefore, is very complicated. He presented his results in the following table:

GUINEA PIGS.

Preliminary treatment	Final treatment	Number treated	Results			% of illness or death
			Died	Recover'd	No effect	
3cc—5cc diph. antitoxin	3–5cc diph. antitoxin	31	2	—	29	6.45
nothing	3–5cc diph. antitoxin	58	9	—	49	15.5
diphtheria toxin only	3–5cc diph. antitoxin	10	—	—	10	0
diph. toxin + ant toxin (serum 1/200—1/400cc)	3–5cc diph. ant toxin	18	10	3	5	72.3

Dr. Smith said that an interval of two or three minutes elapsed between the first and second injections. None died after the first treatment. He did not know whether or not the animals were the young of guinea-pigs that had been treated.

DR. ROSENAU said that he wished that he could believe that Dr. Vaughan's explanation is the correct one, being so plain and succinct. It is very easy to expand Ehrlich's side-chain theory to fit these facts by adding, subtracting or modifying a receptor. Dr. Anderson and he had felt that they could safely let Ehrlich modify his own theory to include the new facts. With Dr. Vaughan he realized that chemistry may some day explain the complex and multiple processes constantly going on in living protoplasm. It seemed to him that science has not yet reached that stage where it can assign a definite chemical molecular structure to such a complex, highly-organized and changing substance as protoplasm. Those who constantly deal with the material sciences would like a physical or chemical explanation of life. A correct explanation of the phenomenon studied in the guinea-pig would bring nearer the solution of many problems connected with metabolism and the fundamental processes on which existence depends.

DETERMINATION OF THE NORMAL TEMPERATURE OF THE CLOSED INGUINAL FOLD OF A CHILD, AND ITS CLINICAL SIGNIFICANCE.*

ALBERT H. PARKS, A.M., M.D.

CHICAGO.

HISTORY.

The practitioner of medicine is constantly looking to science and research for methods he may use in his routine work. Most practitioners seek methods which combine two characteristics, accuracy and practicability, but these are often diametrically opposed. I have attempted to solve a problem in a manner that shall yield results at the same time accurate and easy of application to the clinical case.

Normal and pathologic conditions in the animal body are very intimately connected with, and in fact dependent on, the production, the distribution and the variation of that phenomenon called animal heat.

Medical and scientific literature is replete with all phases of this subject, and I intend to touch on only those points of measurement which may be included in the term thermometry.

The practitioner usually adopts the practice of taking the patient's temperature as one of the first steps in his routine examination. Two methods of estimation as pertains to clinical thermometry are in vogue, namely, the internal and the external. Both have their adherents and applications. Some writers contend that the only true measurement of the temperature of the body can be obtained from the internal cavities, while others state that external methods are sufficiently correct for purposes of clinical study.

The following table shows the results of observations by several authors who have made extended studies along these lines:

TABLE 1.

Maximum.		Minimum.		Mean.		Author and Place.
F.	C.	F.	C.	F.	C.	
99.05	37.2	97.7	36.5	98.42	36.9	Davy[1]: Mouth.
99.5	37.5	98.24	36.8	99.05	37.2	Gierse[2]: Mouth.
98.6	37.0	97.34	36.3	98.06	36.7	Hooper[3]: Mouth.
99.14	37.3	97.88	36.6	98.6	36.7	Hallmann[4]: Mouth.
98.6	37.0	97.88	36.3	98.24	36.8	Clifford Allbutt[5]: Mouth.
100.4	38.	97.16	36.2	98.6	37.0	Wünderlich[6]: Axilla.
99.32	37.4	96.98	36.1	98.24	36.8	Leibermeister[7]: Axilla.
98.78	37.1	98.06	36.7	98.42	36.9	Damrosch[8]: Axilla.
99.32	37.4	96.98	36.1	98.06	36.7	Billet[9]: Axilla.
100.2	37.9	97.34	36.3	98.78	37.1	Billroth[10]: Axilla.
100.4	37.8	97.7	36.5	99.05	37.2	Turgenson[11]: Rectum.
98.78	37.1	97.88	36.6	98.24	36.8	Neuhaus[12]: Rectum.
99.14	37.3	98.42	36.9	98.78	37.1	Jaeger[13]: Rectum.
99.32	37.4	96.98	36.1	98.24	36.8	Nicol[14]: Rectum.
99.5	37.5	99.32	37.4	99.14	37.3	Hall[15]: Rectum.

The average of the mean observations in Table 1 for the mouth temperature is 98.47 F. (36.93 C.), for the axilla 98.43 F. (36.91 C.), for the temperature of the rectum 98.81 F. (37.12 C.). This shows that the difference between the mouth temperature and the axillary temperature is very small, approximately .04 F. (.02 C.). The variation between the axillary and rectal temperature is somewhat larger, being .38 F. (.21 C.). The maximum average for the temperature of the mouth is 99.42 F. (36.91 C.), the minimum being 98.47 F. (36.93 C.); for the axilla, maximum 99.60 F. (37.56 C.), minimum 98.42 F. (36.91 C.), and for the rectum.

---

* Read in the Section on Pathology and Physiology of the American Medical Association, at the Fifty-seventh Annual Session, June, 1906.

* From the Department of Physiology, Northwestern University Medical School.

1. Davy: Phil. Trans., London, 1845, part 2, p. 319.
2. Gierse: "Quænam sit ratio caloris organici, etc." Halae, 1842, p. 40.
3. Hooper: Med. Times and Gaz., London, 1866, vol. ii, p. 483.
4. Hallmann: Quoted from Landois Lehrbuch d. Physiol. Aufl. 3, S. 406.
5. Clifford Allbutt: Jour. Anat. and Physiol., London, 1872, vol. iii, p. 106.
6. Wünderlich: Medical Thermometry, p. 95.
7. Leibermeister: "Handbuch d. Path. u. Therap. d. Fieberd," 1875, p. 78.
8. Damrosch: Deuts. Klinik. Berlin, 1862, vol. ii, p. 331.
9. Billet: These, Strasburg, 1869.
10. Billroth: Arch. f. Klin. Chir., Berlin, 1862, vol. ii, p. 331.
11. Turgensen: "Die Korper warme des gesunden Menschen," Leipsig, 1873.
12. Neuhauss: Virchow's Arch., 1893, vol. cxxxiv, p. 365.
13. Jaeger: Deuts. arch. f. klin. Med., Leipsig, 1881.
14. Nicol: Quoted.
15. Hall: "Text-Book of Physiology."

maximum 99.33 F. (37.41 C.), minimum 98.69 F. (37.05 C.).

Many authors quote higher readings, especially for the rectal temperature, and also declare that the difference between the rectal and axillary temperature is greater, while a few are under the above figures. My observations regarding rectal temperature closely correspond with the results of the above table, with the exception that the range of variation was greater, due to the fact that the temperature range of children is more variable than that of adults.

It can not be denied that for purposes of accuracy the natural closed cavities of the body give more constant and reliable results than surface temperatures, or the artificially closed cavities as the axilla, or the groin.

The surface of the body naturally responds more quickly to the variations in temperature of the surrounding medium, and in some instances the variation is considerable. For instance, in the case of rigor the surface temperature falls several degrees, while the internal temperature is steadily rising. This is further shown by the tests made during the defervescence of fevers, in which case the temperature of the blood falls, while the surface remains at fever heat. A very rapid fall of temperature in an external part likewise corresponds to a very rapid rise in the internal parts. In the vast majority of cases the external cavities of the body, as the axilla and the groin, if properly closed for a few minutes, soon approximate the internal temperature of the body.

In taking the temperature of infants, to which class of patients I now confine my attention, we are confronted by an inability to use the ordinary oral method employed so extensively in adults, and so we are forced to rely on some other means for estimating the body temperature.

METHODS.

The following methods are being used or have been suggested by various authors:

1. Internal surfaces.....rectum, vagina
2. External surfaces.....axilla, groin
3. Freshly voided urine.

The first or rectal temperature has been the accepted method and probably gives the most constant and reliable results. It has always enjoyed the greatest popularity in the practice in hospitals and institutions, while the practitioner in the private home has often made objections to it, as it is sometimes repulsive to his other patients or friends in the home. An oral temperature for the mother, following a rectal temperature for the child is likely to raise a suspicion in the mind of the former that her esthetic interests are not properly guarded by the physician. It is sometimes no justification to say that separate thermometers are kept for each purpose or that the instrument has been properly cleansed, for, in fact, that necessary procedure is sometimes neglected.

Objections are also raised to this method, as it can seldom be repeated often enough for the exigencies of many cases unless the physician is in constant attendance or is assisted by a professional nurse. It is not safe to intrust an unskilled hand with the introduction of the thermometer into the rectal cavity of an infant, for injury to the rectum has been reported in several cases from careless manipulation of the instrument both by means of force and by breakage. A rectal fistula with the introduction of septic material would present a serious condition in an infant. The rectal temperature necessitates an unnecessary exposure to cold and drafts, and is often entirely unreliable, due to contact with or the introduction of the bulb of the thermometer into a mass of feces.

Still less suitable is the method of taking the temperature in the vagina. The taking of the temperature of the freshly voided urine is only mentioned to be condemned.

We are left now to the consideration of the last two methods, external temperatures, taken in the temporarily closed cavities, namely, the axilla and groin. The temperature of the well-closed axilla has probably been the most used and convenient method employed by the practitioner for many years in those cases in which he did not wish, for any reason, to take a rectal temperature. The use of the thermometer in this location is not attended with many difficulties and it overcomes many of the objections to the former procedures. It is also shown by Table 1 to be approximately correct, varying from .38 F. to .21 C. from the rectal temperature.

The temperature of the groin, which has been suggested at various times by numerous authors and employed in practice by a few, possesses many advantages and gives results somewhat similar to those of the axilla. The literature to date does not give any complete records of clinical observations of temperatures taken in the groin nor does one find any description of the technic which would seem to possess many points of interest or value.

I present the following observations made on 175 individual cases: a. The age of the patients varied from 4 months to 5 years. b. Normal cases were used so far as possible. c. Mean readings were taken in all cases used as a basis for the determination of the normal temperature of the groin. d. For comparative results in the groin and rectum, individual readings were largely used without reference to number or time. e. In all observations identical conditions were obtained in each case, and these same conditions were produced so far as possible in all cases as a whole. f. The thermometers used in this work were the ordinary one-half minute self-registering clinical thermometers corrected to the same standard instrument.

TECHNIC.

The following technic was used in these cases:

I. Rectal method.
   1. The ordinary technic was used. The bulb of the thermometer was introduced well into the rectum and the readings recorded when the mercury became stationary.
   2. The child was exposed as little as possible.

II. Inguinal method.
   1. The clothing was loosened, but not removed, so as to be free from the groin.
   2. The groin was wiped dry with a towel to remove all secretions from the skin.
   3. The thermometer was placed deep in the inguinal fold and the leg allowed to return to its natural position of adduction.
   4. Readings were taken *in situ* until the maximum reading was reached.

TABLE 2.

Case.	Morning 8-10 a. m.		Night 3-5 p.m.		Mean.		Place.
	F.	C.	F.	C.	F.	C.	
1. Age 2 years	98.72	37.1	99.1	37.3	98.91	37.1	Rectum.
	98.5	36.9	98.62	37.0	98.56	36.9	Groin.
2. Age 9 mos.	98.9	37.15	99.0	37.2	98.95	37.1	R.
	98.64	37.0	98.5	36.9	98.57	36.9	G.
3. Age 4 years	99.0	37.2	98.7	37.1	98.8	37.1	R.
	98.8	37.1	98.6	37.0	98.7	37.1	G.
4. Age 18 mo.	98.2	36.8	98.5	37.0	98.35	37.1	R.
	97.7	36.5	97.9	36.6	98.0	36.6	G.
5. Age 3 years	100.1	37.8	100.4	38.0	100.15	37.9	R.
	99.8	37.7	99.8	37.7	99.8	37.7	G.
6. Age 1 year.	97.9	36.6	98.0	37.2	97.95	36.6	R.
	97.7	36.5	97.9	36.6	98.0	36.6	G.
7. Age 4 mos.	99.4	37.4	99.1	37.3	99.25	37.3	R.
	99.4	37.4	99.0	37.2	99.2	37.3	G.
8. Age 6 mos.	98.6	37.0	98.65	37.0	98.62	37.6	R.
	98.	36.7	98.2	36.8	98.1	36.7	G.
9. Age 2 years	99.1	37.3	99.3	37.4	99.2	37.3	R.
	98.6	37.0	98.7	37.1	98.65	37.0	G.
10. Age 1 year.	98.8	37.1	98.7	37.1	98.71	37.1	R.
	98.6	37.0	98.6	37.0	98.6	37.0	G.

TABLE 3.

Age.	Rectum. F.	C.	Time.	Groin. F.	C.	Time
18 months	98.8	31.1	4 min.	98.6	37.	6½ min.
1 year	99.32	37.4	3 min.	99.0	37.2	7 min.
4 years	98.06	36.7	3½ min.	97.8	36.6	5½ min.
6 months	99.1	37.3	5 min.	99.0	37.2	5½ min.
9 months	97.8	36.6	4½ min.	97.49	36.4	6 min.
4½ years	98.0	36.7	4 min.	97.6	36.5	6½ min.
2 years	98.78	37.1	6 min.	98.65	37.0	7 min.
1 year	100.04	37.8	3 min.	99.5	37.5	5½ min.
8 months	99.0	37.25	3¼ min.	98.7	37.1	8 min.
18 months	98.8	36.7	4½ min.	98.5	37.0	4¾ min.
3 years	97.9	36.6	5½ min.	97.4	36.3	6½ min.
10 months	98.05	36.7	5 min.	98.0	36.7	6 min.
4 years	99.0	37.2	3½ min.	98.4	36.9	8 min.
5 years	99.14	37.3	4 min.	99.0	37.2	5 min.
4 months	100.2	37.9	3 min.	100.0	37.8	4½ min.
18 months	98.2	36.8	3¼ min.	97.4	36.3	3½ min.
2½ years	98.42	36.9	4½ min.	98.1	36.7	5½ min.
1 year	98.6	37.0	3 min.	98.1	37.7	7 min.
10 months	99.1	37.3	3½ min.	98.9	37.1	6½ min.
3 months	97.8	36.6	4½ min.	97.6	36.4	5 min.

RESULTS.

The few cases given above in Tables 2 and 3, selected at random from the entire number, will show that the difference between internal temperature (rectum) and external temperature (groin) is comparatively small.

The results of the entire number of mean cases under observation show that the average difference between the temperature of the rectum and the closed groin is .34 F. (.18 C.) while the normal temperature of the closed inguinal fold of a child is 98.52 F. (37.5 C.). The greatest difference found in any one case was 1.5 F., while the majority of the cases ranged close to average found. In a number of readings the results of the groin and rectal readings were the same, while in a few cases the inguinal temperature was higher by a fraction of a degree. In most of these cases the lower rectal temperature was found to be due to the contact of the thermometer bulb with fecal masses. In such cases the readings were discarded as not representing the true rectal temperature.

The time element, which is an important one, was carefully worked out and recorded. It was found that with the above technic the rectal method required three and one-half minutes for a complete register of the thermometer, while the inguinal method required six and three-quarters minutes. We did not find that so long a time was necessary for correct results as some authors quote for external reading.

The clinical ease of application of the two methods offers interesting results. The great majority of cases under observation were obtained from hospitals and public institutions, and so we were not forced to face the objections which many practitioners meet with in the employment of rectal temperature. We were impressed with the great facility and ease of the inguinal method. The natural attitude of the child while retaining the thermometer in the closed groin made the usual struggling and crying unnecessary, and with but few exceptions the temperature of the groin was taken without any resistance or disturbance from the child.

It was not found necessary to hold the thermometer in the hand during the process, for the natural close apposition of the thigh to the body retained the instrument in place without any trouble, with the exception of a few cases which showed extreme emaciation. In such a condition more satisfactory results may be obtained from the internal than from the external method. If it is necessary to use the external method the groin possesses obvious advantages over the axilla.

It was not feasible to consider the influence of cold or of extreme heat on the body surface as in sudden chilling or in a rapid rise in the atmospheric temperature, as the patient was protected in all cases, but a rise of .2 F. was observed in the inguinal temperature of one child directly after a warm bath.

With the thermometer in the groin and the leg retained in apposition to the body either by the hand of the nurse or the doctor, the time required for the register of the thermometer can be employed with advantage to a further study of the case.

The inguinal method is absolutely safe for the employment of the mother or the non-professional nurse, the only requisites being an acquaintance with a few simple rules of technic and an ability to read correctly a thermometer scale.

SUMMARY.

a. The normal temperature of the closed inguinal fold of a child is 98.52 F. (37.5 C.).

b. The variation of the inguinal temperature from the rectal temperature approximates one-third of a degree F. or two-fifths of a degree C., the average variation being .34 F. (.18 C.). That is, the inguinal temperature is approximately one-third of a degree F. (two-fifths C.) below rectal temperature.

c. The usual variation between the temperature of the rectum and groin is so small as to be practically disregarded for clinical purposes.

d. The absence of many objectionable features of the rectal method and the ease and reliability of the groin method gives the latter several points of advantage over the rectal method. These advantages of the groin method would recommend it not only as applicable in hospital practice in pediatrics, but more especially in home practice among children.[16]

16. For further literature on the subject the reader may consult Schofer: "Text-book of Physiology"; Cohen: "System of Physiologic Therapeutics"; Vierordt's "Physical Diagnosis"; Rotch: "Pediatrics"; Holt: "Diseases of Children"; Bollean: Lancet, Lond., 1888, vol. II, p. 204; Starr: "Diseases of Children"; Ashby and White: "Diseases of Children"; Landois and Sterling; "Physiology"; Ringer and Stewart: "Proceedings Royal Society," London, 1877; vol. xxvi, p. 186; Crombie: Indian Am. Med. Sc., Calcutta, 1873, vol. xvi; Oertmann: Arch. f. d. ges. Physiol., Bonn, 1878, vol. xvi; Lorain: "De la temperature du corps humane," Paris, 1877, vol. I, p. 434; Redord: "Etudes de thermometrie clinique," 1874, p. 20; Davy: "Researches," London, 1839, vol. i, p. 199.

Skill Acquired by Long and Diligent Application.—In this day of "workless" methods of doing things, remarks the *Western Medical Review*, it will be wise to realize that there are certain ends which can only be obtained by conscientious as well as conscious efforts. There is no method of attaining skill and accuracy of diagnosis except that method which involves long and painstaking mental and manual education.

Special Article

A FORGOTTEN WORTHY, DR. DIEGO ALVAREZ CHANCA, OF SEVILLE, SPAIN.

A. M. FERNANDEZ DE YBARRA, A.B., M.D.
NEW YORK CITY.

With Christopher Columbus, on his second voyage of discovery to America, in the year 1493, there came Dr. Diego Alvarez Chanca, a distinguished practitioner of much learning and professional skill, who held the position of physician-in-ordinary to the King and Queen of Castile and Aragon, and had attended their first-born child, Princess Isabella (who afterward became Queen of Portugal) during a serious illness the year before. He was a native of the city of Seville, and had been especially appointed by the Spanish monarch to accompany that expedition, not only on account of its great political and commercial importance, but also because among the 1,500 persons who came over from Europe to America in that fleet were several distinguished personages and a large number of aristocratic young gentlemen, restless and daring warriors who had done excellent service in the war just ended against the Moors. As an able practitioner, he saved the life of Christopher Columbus, who suffered a very dangerous attack of typhus fever on one occasion and pernicious malarial fever on another occasion, as well as the lives of many Spanish hidalgos who were at the point of death as victims of disease during their stay at the island of Hispaniola or Haiti, as the aborigines called it.

The second expedition was altogether different from the one sent out the previous year in quest of a new passage to the Indies. Instead of the three small caravels, carrying only 120 persons, which accomplished the most transcendent event in the history of humanity—the discovery of the western hemisphere—this flotilla was composed of three great galleons or carracks and fourteen caravels of different sizes. It was well provided with all the requisites for the establishment of a permanent settlement in the land that had been discovered the year before. Even 20 horses for as many lancers (which played a most terrorizing influence among the American Indians) were also on board those vessels.

On their arrival at the island of Hispaniola or Santo Domingo—where the year before Columbus had left 38 men in an improvised fortress, constructed with the remains of the caravel *Santa Maria*, wrecked on the reefs of the shore—Dr. Chanca wrote in the Spanish language of the fifteenth century his famous letter to the Municipal Council or *Cabildo* of his native city, which manuscript is unquestionably the first written document about the flora, the fauna, the ethnology and the anthropology of America.

Dr. Chanca's letter was written at the port of Isabella, during the last days of January, 1494; it left that port February 2, in care of Don Antonio de Torres, commander of the twelve vessels sent back by Columbus to Spain with the news of the discoveries, and arrived there April 8, 1494.

On his return to Spain Dr. Chanca published, in the year 1506, a treatise entitled "Para curar el mal de costado," (The Treatment of Pleurisy) and a commentatorial work in Latin, criticising the book entitled "De Conservanda Juventute et Retardanda Senectute," whose author was another celebrated Spanish physician named Dr. Arnaldo de Villanova. The title of the second work of Dr. Chanca is "Commentum novum in Parabolis divi Arnaldi de Villanova," which was printed in Seville, the year 1514.

Here now follow some scattered paragraphs, translated by me from the original Spanish letter of Dr. Diego Alvarez Chanca, addressed to the municipal authorities of the city of Seville, considered by competent judges to be a most remarkable document, and the best description of the first part of the second voyage of Christopher Columbus to America. I have added a few explanatory notes:

"Since the occurrences which I relate in private letters to other persons are not of such general interest as those which are contained in this epistle, I have resolved to give you a complete narrative of the events of our voyage, as well as to treat of other matters which form the subject of my petition to you. The news I have to communicate is as follows:

The expedition which their Catholic Majesties sent, by divine permission, from Spain to the Indies, under the command of Christopher Columbus, admiral of the ocean, left Cadiz on the twenty-fifth day of September, in the year 1493, with wind and weather favorable for the voyage. This wind lasted two days, during which time we managed to make nearly fifty leagues. The weather then changing, we made little or no progress for the next two days; it pleased God, after this, to restore us fine weather, so that in two days more we reached the island of Great Canary. Here we put into harbor, which we were obliged to do to repair one of the ships that made a great deal of water. We remained all that day, and on the following set sail again, but were several times becalmed, so that four or five days more passed before we reached the island of Gomera. We had to remain at Gomera one day to lay in our stores of meat, wood, and as much water to drink as we could stow, preparatory for the long voyage that we expected to make without seeing land.[1] Thus it happened that through the delay at these two ports, and being calmed the day after leaving Gomera, we spent nineteen or twenty days before we arrived at the island of Ferro.[2]

After this we had, by the goodness of God, a return to fine weather, more continuous than any fleet ever enjoyed during so long a voyage; so that leaving Ferro on the thirteenth day of October, within twenty days we came in sight of land, but we should have seen it in fourteen or fifteen days if the ship *Capitana*[3] had been as good a sailer as the other vessels, for many times the others had to shorten sail because they were leaving us much behind. During all this time we had great fortune, for throughout the voyage we encountered no storm, with the exception of one on St. Simon's eve, which for four hours put us in considerable danger.[4]

On the first Sunday after All Saints' day, namely, the third of November, about dawn, a pilot of the *Capitana* cried out: "The reward, I see land!"[5] The joy of the people was so great, that it was wonderful to hear their cries and exclamations of pleasure; and they had good reason to be delighted, for they had become so wearied of bad living, and of working the water out of the leaky ships, that all sighed most anxiously for land. The pilots of the fleet reckoned on that day that between the time of leaving the island of Ferro and first reaching land, we had made 800 leagues;[6] others said 780, so that the difference was not great, and 300 more between Ferro and Cadiz, made in all 1,100 leagues.[7] I do not, therefore, feel now as one who had not seen enough water.

On the morning of the aforesaid Sunday we saw lying before us an island, and soon on the right hand another appeared. The first was high and mountainous on the side nearest to us; the other was flat and very thickly wooded. As soon as the

1. From that island of Gomera Columbus embarked eight pigs, bulls, cows and calves, sheep and goats, fowls and pigeons, seeds of oranges, lemons, bergamots, citrons, pomegranates, dates, grapes, olives, melons and other European fruits, as well as all kinds of orchard and garden vegetables. All these were the origin of their species in the New World. The expedition likewise carried implements of husbandry, shipped before leaving Spain.

2. This is the southwesternmost of the group of the Canary Islands, formerly called the Fortunate Islands, and is named in Spanish *Hierro*.

3. That vessel was a galleon of 400 tons' burden, that carried the admiral's flag, and in which Dr. Chanca made the trip.

4. They believed themselves in much peril, as they certainly were in such a sudden and fierce storm, accompanied by heavy rain, rapid lightning and great peals of thunder, which are so frequent in the tropics, until they beheld several of those lambent flames called by sailors "St. Elmo's tapers," playing about the tops of the masts and gliding along the rigging, which are occasionally seen about tempest-tossed vessels during a highly electric state of the atmosphere. The sailors consider that phenomenon as of good omen.

5. The Spanish government had offered a reward in money to the first person who would see land in this voyage.

6. That is to say, 2,400 Spanish miles, or about 2,057 English miles.

7. Three thousand three hundred Spanish miles, equivalent to about 2,829 English miles.

light of day became brighter other islands began to appear on the right and on the left of us, so that that day there were six of them to be seen lying in different directions, and most of them of considerable size. . . .

This island of Marigalante is filled with an astonishing thick growth of wood; that variety of trees being unknown to us, some bearing fruit and some others flowers. It was surprising to see that, and, indeed, every spot was covered with verdure.

We found there a tree whose leaf had the finest smell of cloves that I have ever met with. It was in shape like a laurel leaf, but not so large; I think it was really a species of laurel.[8] There were wild fruits of various kinds, some of which our men, not very prudently, tasted; and on only touching them with their tongues, their mouths and cheeks became swollen, and they suffered such a great heat and pain that they seemed by their actions as if they were crazy, and felt obliged to resort to cooling applications to ease the pain and discomfort.[9] . . .

These islanders appear to us to be more civilized than those those who had hitherto been seen before, for although all Indians have houses made of straw, yet the dwellings of these people are constructed in a much superior fashion, better stocked with provisions, and exhibit more evidence of industry, both on the part of the men and of the women. They had a considerable quantity of cotton, already spun and prepared for spinning, and many cotton blankets, so well woven as to be in no way inferior to similar ones made in our country.[10] . . .

We were able to distinguish which of the women were natives of these islands and which captives, by the distinction that a Caribbee woman wore on each leg two bands of rings of woven cotton, one fastened around the knee and the other around the ankle, by this means making the calves of their legs look big and the above-mentioned parts small, which I imagine they do because they believe this sort of adornment makes them pretty and graceful; by that peculiarity we distinguish them.

The captive women told us that the Caribbee men use them with such cruelty as would scarcely be believed; and that they eat the children which they bear to them, only bringing up those which they have by their native wives. Such of their male enemies as they can take away alive, they bring here to their homes to make a feast of them, and those who are killed in battle they eat up after the fighting is over. They claim the flesh of man is so good to eat that nothing like it can be compared to it in the world; and this is very evident, for of the human bones we found in their houses everything that could be gnawed had already been gnawed, so that nothing else remained of them but what was too hard to be eaten. In one of the houses we went in we found the neck of a man undergoing the process of cooking in a pot, preparatory for eating it.[11]

The habits of these Caribbees are beastly.

There are three islands: this one on which we are is called by the natives Turuqueira;[12] the other, which was the first we saw, is named Cayre,[13] and the third Ayay.[14] There is a general resemblance among the natives of these three islands, as if they were of the same lineage. They do no harm to one another, but each and all of them wage war against the inhabitants of other neighboring islands, and for this purpose sometimes they go as far as 150 leagues in their canoes,[15] which are a narrow kind of boats, each made out of a single trunk of a tree. Their arms are arrows, in place of iron weapons, and as they have no iron, some of them point their arrows with a sharpened piece of tortoise-shell, and others make their arrow heads of fish spines, which are naturally barbed like coarse saws. These arms are dangerous weapons only to naked people like the Indians, causing death or severe injury, but to men of our nation they are not much to be feared.[16] . . .

When the Caribbees take any boys as prisoners of war, they cut off their male organs, fatten them until they grow up to manhood and then, when they wish to make a great feast, they kill and eat them up, for they say the flesh of boys and women is not good to eat. Three of those boys thus mutilated came fleeing to us when the visited the houses.[17]

The difference between these Caribbees and the other Indians, with respect to dress, consists in wearing the hair very long, while the others have it clipt irregularly; also because they engrave in their heads innumerable cross-like marks and different devices, each according to his fancy; and they make those marks with sharpened bamboo sticks. All of them, both the Caribbee and the other Indians, are beardless, so that it is a marvellous thing to find one of these men with a beard. The Caribbees whom we have taken prisoners, have their eyes and eyebrows stained circularly around, which I think they do for ostentation, and also because it gives them a ferocious appearance. . . .

Here almost terminate the group of islands, which on the side toward Spain had not been seen before by the Admiral,[18]

8. Probably it was the *Kalmia angustifolia* or "Laurier des Montagnes," as it is called in the French West India Islands.

9. I believe those poisonous fruits were a species of small apple called in Spanish *manzanillo*, or in English manchineel tree (*Hippomane mancinella*), which is still to be found in the West India Islands. The fruit of the manchineel tree produces similar effects to those here described by Dr. Chanca, also vomiting and purging. The shadow cast by the foliage of this wild tree raises a blister on the skin, the same as the guao (*Rhus metopium*), which is a wild shrub, very abundant in the Antilles.

10. The Caribbee Indians possessed also the art of making household utensils of clay, which they baked in kilns like the potters of Europe.

11. Mr. Justin Winsor, the accomplished librarian of Harvard College, in his "Christopher Columbus," referring to the Caribbee Indians, makes the following interesting remarks: "The contiguity of these two races, the fierce Carib and the timid tribes of the more northern islands (the Lucayans) has long puzzled the ethnologist. Irving indulged in some rambling notions of the origin of the Carib, derived from observations of the early students of the obscure relations of the American peoples. Larger inquiries and more scientific observations since Irving's time have been given to the subject, still without bringing the question to recognizable bearings. The craniology of the Caribs is scantily known, and there is much yet to be divulged. The race in its purity has long been extinct. Lucien de Rosny in an anthropologic study of the Antilles published by the French Society of Ethnology in 1886, has amassed considerable data for future deductions."

12. This was the island of Guadeloupe, named by Columbus *Nuestra Senora de la Guadalupe*, in remembrance of the famous sanctuary of Our Lady of Guadalupe, in the province of Extremadura, Spain.

13. This was the island of Dominica, so called by Columbus from having been discovered on a Sunday (*Dies Dominica*). It is 29 miles long and 13 miles in its greatest breadth, situated at 15 degrees 25 minutes north latitude and 61 degrees 15 minutes west from Greenwich Observatory. It has an area of 291 square miles and belongs to England.

14. This must have been the island now known as Martinique, though Dr. Chanca does not mention in his letter having been there. It is situated 30 miles south by west of the island of Dominica and 20 miles north of the island of St. Lucia.

15. That is to say, 450 Spanish miles, or about 376 English miles, which means as far as Porto Rico, Santo Domingo and Cuba to the North, and Trinidad, Curaçao and the coast of South America to the South.

16. Dr. Chanca did not know at that date that the arrow points of the Caribbees were poisoned with the juice of a plant, probably the inspissated sap of the manchineel tree.

17. Herr Alexander von Humboldt, in his "Personal Narrative of Travels to the Equinoctial Regions of America," speaking about the Caribbees, makes the following instructive observations: "Reproaches addressed to the natives on the abominable practice which we here discuss, produce no effect; it is as if a Brahmin, traveling in Europe, were to reproach us with the habit of feeding on the flesh of animals. In the eyes of the Indian of the Guayana, the Chernvichæna was a being entirely different from himself, and one whom he thought it was no more unjust to kill, than the jaguars of the forest. It was merely from a sense of propriety that, while he remained in the mission, he would eat only the same food as the fathers. The natives, if they return to their tribe (*irse al monte*), or find themselves pressed by hunger, soon resume their old habits of anthropophagy. And why should we be so much astonished at this inconstancy in the tribes of the Orinoco, when we are reminded, by terrible and well-ascertained examples, of what has passed among civilized nations in times of great scarcity? In Egypt, in the thirteenth century, the habit of eating human flesh pervaded all classes of society; extraordinary snares were spread for physicians in particular. They were called to attend persons who pretended to be sick, but who were only hungry; and it was not in order to be consulted, but devoured. An historian of great veracity, Abd-allatif, has related how a practice, which at first inspired dread and horror, soon occasioned not the slightest surprise."

18. Dr. Chanca refers here to the island called by the aborigines Borinquen, which is the island we know to-day as Porto Rico, and named by Columbus San Juan Bautista (St. John the Baptist). The date of its discovery was Saturday, Nov. 16, 1493. There ended the Caribbee islands, the first account of whose fierce and savage inhabitants was received with eager curiosity by the learned of Europe.

although we regard, as a matter of certainty, that there is land more than forty leagues beyond the southernmost of these newly-discovered islands.[19] We believe this to be the case, because two days before we saw the first island[20] we had observed some birds called "rabihorcados," which are marine birds of prey that do not sit nor sleep on the water, making circumvolutions high up in the air at the close of evening, with the object of taking their reckoning of where they are and flying after that in a straight line towards land to sleep.[21] These birds could not have been going to spend the night at more than twelve or fifteen leagues' distance from where they were, because it was already late in the evening, and the direction they took in their flight was toward the south. From all this we concluded there was land in that direction still undiscovered; but we did not go in search of it because it would have taken us out of our intended route. I hope that in a few more voyages it will be discovered.[22] . . .

The country is very remarkable, and contains a vast number of large rivers and extensive chains of mountains, with broad, open valleys, and the mountains are very high. It does not look as if the grass is ever cut throughout the whole year. I do not think that they have any winter here, for at Christmas we found many bird-nests, some containing the young birds and the others the egg. No four-footed animal has ever been seen in this, nor in any of the other islands, except some dogs of various colors, as in our country, but in shape and size like lap-dogs. Of wild, ferocious beasts, there are none.[23]

I came near forgetting to mention another four-footed little animal, in the color of its hair, size, and fur, like a rabbit, but with long tail and feet similar to those of a rat.[24] These animals climb up the trees,[25] and many of our men who have eaten them say their taste is very good. There are many snakes, small in size, also lizards, but not so many, for the Indians consider them as great a luxury as we do pheasants. These lizards are of the same size as ours, but different in shape. In a small adjacent island, close by a harbor, which we named Monte Cristo, where we stayed several days,[26] our men saw an enormous kind of lizard, which they said was as large around the body as a calf, and the tail shaped like a lance.[27] They often went out to kill it, but bulky as it was it disappeared in the thicket and got into the sea, so that they could not catch it. . . .

There are, both in this and in the other islands, an infinite number of birds like those we have in our country, and many others, such as we had never seen. No kind of domestic fowl has been found here, with the exception of some ducks in the houses of the island Turuqueira. Those ducks were in size larger than the ones we have in Spain, though smaller than geese, very pretty, with flat crest, and most of them as white as snow, but some also black. . . .

Fish is abundant here, an article of food of which we were in great need, for our provision of meat was running short, and it is a singualr kind of fish, more wholesome than those we have in Spain. The climate does not allow the fish to be kept from one day to another, for all animal food speedily becomes unwholesome on account of the great heat and dampness. . . .

Large quantities of vegetables have been planted, and they certainly attain a more luxuriant growth in eight days here than they would in Spain in twenty.

We are frequently visited here by a great number of Indians, accompanied by their caciques, who are their captains or chiefs, and many women. They all come loaded with *ages*, a sort of turnip, very excellent food, which they cook and prepare in various ways. This food is very nutritious, and has proved of the greatest benefit to us all after the privations we endured when at sea, which in truth were more severe than man ever suffered. . . .

The little time that we have spent on land has been so much occupied in seeking a place to establish the settlement,[28] and in providing ourselves with things we needed,[29] that we have had little opportunity of becoming acquainted with the natural productions of the soil. In spite of this drawback, we have already seen many marvellous things. For instance: trees bearing wool, of a sufficiently fine quality (according to those who are acquainted with that industrial art) to be woven into good cloth.[30] And of this kind of tree there are so many, that we might load our vessels with wool, though it is somewhat difficult to gather it because these trees are very thorny, but some means can easily be found to overcome that difficulty.

There are also cotton trees as large as peach trees, which all the year round produce cotton, and in abundance.[31] We found trees which produce wax, as good both in color and smell as bees-wax, and equally useful for burning; indeed, with very little difference between the one and the other.[32] There is a vast number of trees which yield surprisingly fine turpentine.[33] Tar is found in abundance, of very good quality, too.[34] We discovered trees which, in my opinion, bear nutmegs, but at present without fruit on them, and I say so because the bark tastes and smells like nutmegs.[35] I saw one root of ginger,

19. It is truly admirable how nearly exact was this calculation of Dr. Chanca, for the comparatively large island of Trinidad, and the north coast of Venezuela, are about that distance from Martinique, the southernmost of those just discovered islands.

20. The island of Dominica.

21. They were frigate or man-o'-war birds (*Tachypetes aquila*), a peculiarity of which is that they persecute and compel the much larger marine birds, common pelicans (*Pelicanus onocrotalus*), to throw up what they have swallowed, and eat it themselves.

22. And that land was in fact discovered, as predicted by the learned author of this important historical document, in the very next voyage of Columbus. On July 31, 1498, he discovered the island of Trinidad and caught a glimpse of *terra firma* at the delta of the Orinoco river.

23. The cayman and the crocodile are the most dangerous animals found.

24. This little animal is the *hutia* or *jutia*, as it is called in Spanish after its Indian name, a sort of mountain rat still plentiful in those islands. There are two distinct varieties: one, large in size, called *jutia conga* (*Capromys Fournieri*), and the other, small in size, named *jutia carabali* (*Capromys Poeyi*).

25. The present poor country people of those islands roast and eat them the same as little pigs, and their taste is really good. During the recent struggle for independence in Cuba, the patriot soldiers were compelled, on account of the scarcity and poor quality of their armament, together with lack of ammunitions of war, to live in the woods, and there they killed almost all the jutias to provide themselves with food.

26. This small island is called now Cabras or Goat Island.

27. This big kind of lizard was nothing else but an alligator, which is the corrupted English word from the Spanish *el lagarto* (*Alligator lucius*).

28. They found at last a convenient place, in the selection of which the professional advice of Dr. Chanca was duly consulted. It was on the shore of a good bay on the north coast, on high ground, with two rivers of potable water near by, and the back part well closed by the thick growth of an impassible forest that protected it from being set on fire by the Indians on a night attack. There in that spot was immediately commenced the building up of the very first Christian town of the New World, to which Columbus gave the appropriate name of Isabella, his great protectress. The ruins of the stone buildings in a solitary waste constitute to-day the melancholy relic of that historical locality.

29. The principal of those things needed were fresh vegetables and fish, and the expeditionists soon got them. The vegetable gardens planted were speedily clothed in green, producing plentifully onions and pumpkins, radishes and beets. Sugar-cane, the first ever planted in American soil, and brought by those colonizers from the Canary Islands, had also been sown, and came up splendidly.

30. The tree to which reference is made here is called *ceiba* in Spanish, *pojot* in the French West India islands, and "five-leaved silk-cotton-tree" in English (*Bombax ceiba*, Lin.). It grows to an immense size, is beautiful in appearance, and has its seeds enveloped in a cottony substance, light as feather, which fly in the air to a great distance.

31. Probably the species known now as Sea Island cotton, still to be found wild in some localities in Cuba, Porto Rico and Santo Domingo. All varieties of *Gossypium* require a dry and sandy soil, and generally the plant flourishes most luxuriantly near the seacoast.

32. This tree is the wax-palm (*Ceroxylon andicola*), the stem of which is covered with a secretion consisting of two-thirds resin and one-third wax.

33. One of those trees, besides the many varieties of pine-trees (genus *Pinus*), was called by the native Indians *hóbo* or *jóbo* (*Spondias lutea* or *Décandrie pentagynie*), which is the "mombain" with yellow fruit of the French botanists, a bulky tree belonging to the *Terebinthaceæ* family, very abundant in the Antilles and resembling somewhat the cedar.

34. More correctly asphalt or mineral pitch, of which there are several lakes in the Antilles, notably the one in the island of Trinidad, about three miles in circumference.

35. A species of *Myristica*, but certainly not the Myristica moschata of the Molucca islands. Probably it was the tree called by the aborigines *caumaná*, whose leaves have a smell like that of fennel, the bark a sweet taste, and in general appearance resembles the nutmeg tree.

which an Indian was carrying around his neck.[36] There is aloes too, though not of the same kind as the one we are acquainted with in Spain, but, nevertheless, a species of aloes that we doctors use.[37] A sort of cinnamon has likewise been found, but, to speak truthfully, it is not of such a fine quality as the one we have in Spain; or, perhaps, this is so because now it is not the proper season to gather it, or the soil in which it was found growing in this vicinity is not well adapted.[38] We have also seen here some yellow mirabolans.[39] At this season they are lying under the trees, and as the ground is very damp they are all rotten, and have a very bitter taste, due, in my opinion, to their state of decomposition; but the flavor of those parts which in spite of that have remained sound, is the same as that of the genuine mirabolan. There is, besides, very good kind of mastic.[40] . . .

In our present position, we are in the neighborhood of many mines of gold, not any one of which, we are told, is more than twenty or twenty-five leagues off. The Indians say that some of them are in Niti, a place in the possession of Caomabó, that Indian king who killed the Christians;[41] other mines are located in another place called Cibao, which, if it please God, we shall see with our own eyes before many days have passed; indeed, we should go there at once were it not because we have so many things to attend to that there are not enough men among us to do it at present. And this is in consequence of one-third of our people having fallen sick within four or five days after we landed here, which misfortune, I think, has happened principally on account of the toil and privations of the journey, to which must be added the variableness of the climate;[42] but I trust in our Lord to be able to restore all the sick to health.[43]

None of the natives of all these islands we have visited possess any iron. They have many implements, also hatchets and axes, all made of stone, which are so handsome and well finished that it is a wonder how they can contrive to make them without employing iron. . . .

Their principal food consists of a sort of bread made of the root of a herb, half way between a tree and grass,[44] and the *age*, which I have already described as being a kind of turnip, and a very good food certainly it is.[45] They use, to season it, a vegetable called *agi*,[46] which they also employ to give a sharp taste to the fish and such birds as they can manage to catch, of the infinite variety there are in this island, dishes, all of them, that they prepare in different ways. They have, besides, a kind of grain, in appearance like hazelnuts, very good to eat.[47] They eat all the snakes, lizards, spiders, and worms that they find on the ground, so that, according to my judgment, their bestiality is greater than that of any beast on the face of the earth. . . .

The admiral had, at one time, determined to leave the search for the mines until he had first dispatched the ships that were to return to Spain, on account of the great sickness which had prevailed among our men;[48] but afterward he resolved to send two detachments under the command of two captains, one to Cibao,[49] and the other to Niti,[50] places where, as I have already stated, Caonabó lived and ruled. These two detachments in effect departed, and one of them returned on the twentieth of the month, while the other did so on the following day. The party that went to Cibao saw gold in so many places that one scarcely dares to state the fact, for, in truth, they found it in more than fifty brooks and rivers, as well as on their banks; so that the captain said that anybody who wished to seek for gold throughout that province, would be sure to find as much as he wanted. He brought with him specimens from the different localities, that is to say, from the sand of the rivers and their banks.[51]

It is generally believed that by digging as we know how, the gold will be found in greater compact masses, for the Indians neither know how to dig nor have they any means of digging the ground more than to a hand's depth. The other captain who went to the place called Niti, returned likewise with news of a great quantity of gold found in three or four localities, of which he also brought some specimens with him.[52] Thus, surely, the King and Queen may henceforth regard themselves as the most prosperous and wealthy sovereigns on earth, because never yet, since the creation of this world, has such a thing been seen or read of. On the return of the ships on the next voyage, they certainly will be able to carry back such a quantity of gold as will fill with amazement all who hear of it.

Here I think I shall do well to break off my narrative. And I believe that those who do not know me, and hear of these things that I relate to you, may consider me prolix and somewhat an exaggerator, but God is witness that I have not exceeded by one iota the bounds of truth."

2164 Fifth Avenue.

EDITOR'S NOTE: Dr. Carl H. von Klein, Chicago, gives us the following additional information:

Dr. Chanca was appointed physician to Columbus' fleet on his second expedition by a dispatch of May 23, 1493. And on May 24 the chief accountants were instructed to pay him

36. Truly, this must have been the dry, wrinkled rhizome of the ginger-plant (*Zinziber officinalis*), so well known in Jamaica.

37. The species called Barbadoes aloes (*Aloes hepatica*), which is still considered of an inferior quality to *Aloes socotrina*.

38. That was probably the wild American cinnamon (*Nectandra cinnamoides*), or perhaps the white cinnamon of Winter (*Cañella alba*).

39. They most likely were the fruit of the *Myrabolanus citrino* of Gartner.

40. A valuable resin exuding from the mastic-tree (*Pistacia lenticus*).

41. This Indian chief was a Caribbee by birth and ruled over the province of Hispaniola, called by the natives *Mangana*, in which were the mountains named Cibao. He was the cacique who killed the 38 men left by Columbus in that island on his return to Spain from his first voyage of discovery to America.

42. The climate suddenly changes in those West India islands from being very hot and dry to comparatively cool and very damp, due to long-continued and heavy rain.

43. Columbus himself was also sick with malarial fever for a few days; and seven months later suffered a dangerous malady, which I have ventured to diagnose as typhus or "ship fever" in my monograph on "The Medical History of Christopher Columbus," (which is the first and only one existing), read before the First Pan-American Medical Congress, held at Washington, D. C., in 1893, and published in the English language in THE JOURNAL A. M. A., May 5, 1894, and in the Dublin Jour. Med. Sci., August and September, 1894. It has also been published in other languages.

44. I think Dr. Chanca alludes here to the maize or Indian corn (*Zea mays*), of which the aborigines of Hayti made a kind of bread.

45. This farinaceous root is the *yuca*, called in English yucca or Adam's needle, also known as Barbadoes nut, a fibrous tuber, very esculent, of which there are in the West Indies two well-known kinds, the sweet (*Yucca gloriosa*) and the sour (*Yucca filamentosa*), this last one being cathartic and somewhat poisonous. It contains a large quantity of starch, which is obtained from the juice of the grated yucca, and from the fibrous residue is prepared the *casabe* or cassava (a corruption of the Spanish word) in the shape of very large, round and thin sort of crackers, called in Spanish *tortas de casabe*. This old kind of Indian bread is still made in Cuba, Porto Rico, Santo Domingo, etc., and is very much relished.

46. Red pepper, called *chilli* in Mexico (*Capsicum frutescens*).

47. It was not a grain at all, but the palmiche (in Spanish), which is the small nut of the royal palm-tree, growing in bunches like the fruit of the date-palm. It is very much used in Cuba, Porto Rico, Santo Domingo and the other West India islands to fatten pigs with. Very likely the Indians ate it as food, and from that fact Dr. Chanca got his notion of its being a grain. Really, that nut looks like a small, green hazel-nut.

48. The expeditionists in great number were suffering from malarial fevers, about one-third of them, as Dr. Chanca states. That disease was in those days very little known, and much less its prevention and treatment. The miraculous *pulvis febrifugus orbis americani*, also called then with the names of "Jesuits' powders" and "Countess's powders" (*los polvos de la condesa*), were not yet known to Europeans. The existence, and the wonderfully curative virtue of the mysterious "quinquina" (a corruption of the indigenous Peruvian word *kina-kina*, which signifies "the bark" *par excellence*, and was the remedy that saved the lives of Charles II of England, Louis XIV of France, and Friedrich the Great of Germany, was then only known to the aborigines of the undiscovered kingdom of Peru.

49. In the Lucayan language that word meant "stone mountain."

50. The fertile valley later called by the Spaniards *La vega real*.

51. One of those specimens of gold was a nugget that weighed 9 ounces.

52. Those specimens of gold from the valley called Niti were fewer in number and of less value than the ones brought out from the mountains of Cibao. The captains of those two small detachments of Spanish soldiers were two brave young hidalgos, one named Alonso de Ojeda, who started with only fifteen soldiers, and the other, Ginés de Gorbalán, who was sent back to Spain by Columbus right after his return from this expedition to Niti, as a witness of the marvelous richness of Hispaniola. He took away with him to Spain the large nugget of gold weighing 9 ounces.

salary and rations as scrivener in the Indies. He became the physician of the colonies, for which Columbus credited him in his memorial to the monarchs as doing good service in his profession at a sacrifice of a large emolument which his practice brought to him in Seville. It is principally through Dr. Chanca that we have any history of Columbus' second voyage. He wrote a letter on the history of the voyage, which was sent by him to the Cathedral Chapter of Seville. The original is thought to be lost, but Navarrete in his "Historia de la Reyes Catolicos," in 1825, copied a transcript which belonged to a collection formed by Father Antonio de Aspa, a monk at the monastery of the Mejorada, where Columbus is known to have deposited some of his papers. The transcript is now in the Royal Academy of History, Madrid. Navarrete quotes a letter from Columbus to the king in reference to Dr. Chanca as it appears in a work entitled "Commentum in parabolis divi Arnoldi de Villanova ad illustris-simum, etc.," Sevilla, 1514, in fol. It read as follows:

"You will inform their Highnesses of the continual labor that Doctor Chanca has undergone, from the prodigious number of sick and the scarcity of provisions, and that, in spite of all this, he exhibits the greatest zeal and kindness in everything that relates to his profession. As their Highnesses have entrusted me with the charge of fixing the salary that is to be paid to him while out here (although it is certain that he neither receives, nor can receive anything from anyone, and does not receive anything from his position equal to what he did and could still do in Spain, where he lived peaceably and at ease, in a very different style from what he does here; and, although he declares that he earned more in Spain, exclusive of the pay which he received from their Highnesses), I have, nevertheless, not ventured to place to the credit of his account more than 50,000 maravedis per annum, as the sum which he is to receive for his yearly labor during the time of his stay in this country. I beg their Highnesses to give their sanction to this salary, exclusive of his maintenance while here; and I do so, because he asserts that all the medical men who attend their Highnesses in the royal yachts, or in any of their expeditions, are accustomed to receive by right the day's pay out of the annual salary of each individual. Let this be as it may, I am informed for certain, that on whatever service they are engaged, it is the custom to give them a certain fixed sum, settled at the will and by order of their Highnesses, as compensation for the said day's pay. You will, therefore, beg their Highnesses to decide this matter, as well with respect to the annual pay as to the above-mentioned usage, so that the said doctor may be reasonably satisfied."

The following reply was made to Columbus' letter: "Their Highnesses acknowledge the justice of Doctor Chanca's observations, and it is their wish that the Admiral shall pay him the sum which he has allowed him, exclusive of his fixed annual salary. With respect to the day's pay allowed to medical men it is not the custom to authorize them to receive it, except when they are in personal attendance on our Lord, the King." Nothing is known of the previous life of Dr. Chanca. The contribution of Dr. Ybarra will add a valuable page to the medical history of America.

Clinical Notes

INTRASACCULAR SUTURE OF ANEURISMS.

W. O. BULLOCK, JR., M.D.
LEXINGTON, KY.

It is now four years since Matas, of New Orleans, gave to the profession the result of his reasoning and experience in the treatment of aneurisms. Proceeding on well-known grounds that serous surfaces, when brought together and held together will form adhesions, and that these adhesions in time become firm and unyielding, the intima of all vascular structures being made up of endothelium or rather lined with it, it was thought and subsequently proved by him that this membrane would behave in the same way as does the peritoneum, the adhesive properties of which enable the surgeon to perform many operations on the abdominal viscera which would otherwise be impossible. The chief question to be settled before the principle could be generally adopted was: Are the adhesions so formed strong enough to resist the blood pressure behind them? This point can only be settled by the combined experience of surgeons, and this is my reason for making this report.

My own experience with the operation of suture within the sac of the aneurism now includes four cases, three of which have already been made public.[1] A fourth case more fully reported herein completes my list. Before taking up the last one of my series, however, I shall review briefly my previously reported cases.

HISTORIES OF PREVIOUS CASES.

CASE 1.—Traumatic fusiform aneurism of femoral artery.

Patient.—E. C., colored, aged 35.

History.—A wagon passed over the thigh in September, 1902, and symptoms began shortly afterward.

Operation.—The patient was operated on Feb. 23, 1903. A large aneurism of the femoral artery the size of a cocoanut was found. There were two openings in the bottom of the sac separated by about an inch. The operation of intrasaccular occlusion was carried out step by step according to the original directions of the author of the method. No. 2 chromic gut sutures were used to close the vessels and for reinforcing sutures. There was a mild infection of the skin incision.

Postoperative History.—The leg and foot were warm and painless; there were no symptoms of impaired circulation. The patient was well fourteen months after operation.

CASE 2.—Pathologic fusiform aneurism, popliteal artery.

Patient.—B. B., colored, aged 50, was a porter in a stove store and was accustomed to lift heavy weights.

History.—There was no definite history of injury. The first symptoms appeared eighteen months before operation.

Operation.—On June 4 the patient was operated on. The sac held about a quart of blood; the sac wall was thick and friable. There were two openings within the sac, separated by about an inch. The tourniquet broke during the operation and an extemporized tourniquet was made of the irrigator tube. The openings in the sac were closed by suture. The openings were on the outer wall of the sac nearer the superficial than the deep surface. A slight variation was necessary in the subsequent technic, due to the eccentric location of the vascular orifices.

Postoperative History.—The wound was dressed on the third day. Temperature was 104 and suppuration was profuse, coming from within the sac. Drainage was instituted and this gradually subsided. The wound healed in four weeks. There was no swelling or coldness or other symptom of impaired circulation in the leg or foot. This man is well to-day, never having had any trouble with his leg since leaving the hospital. Infection in this case was due to faulty sterilization after using the unsterilized irrigator tube.

CASE 3.—Traumatico-pathologico-fusiform aneurism of the popliteal artery.

Patient.—W. B., colored, aged 34, a laborer, gave a history of syphilis. There was no distinct history of trauma. Tumor and pulsation were noticed three or four months before admission to the hospital.

Operation.—The Matas operation was performed July 29, 1904. The tumor was small, about the size of a goose egg. There were two openings on the inner wall of the sac, and these were sutured with No. 1 chromic catgut. The same variation as in Case 2 was used in this case. The sac wall was thick and friable in this case also.

Postoperative History.—The case ran an afebrile course. The wound healed by primary union. Some swelling of the leg persisted for two months after leaving the hospital. This patient is well to-day.

1. Amer. Med., Aug. 29, 1903; Trans. Amer. Surg. Assoc., 1905, in a report by Dr. Matas.

HISTORY OF PRESENT CASE.

CASE 4.—Traumatico-pathologic aneurism, femoral artery.

Patient.—D. C., colored, aged 65, stated that during the Civil War he had syphilis. Arteries were moderately hard.

History of Aneurism.—He states that about a month before admission to the hospital he noticed a small lump, about the size of the end of his thumb, in the upper inner front part of his right thigh; he says that it was rather painful, but that it did not keep him from his work. He says also that there was no apparent increase in its size until one of his fellow workmen fell against his thigh; it then began to grow very rapidly and became very painful. This was about two weeks ago. Dec. 28, 1905, there was a large pulsating tumor, somewhat irregular in form, measuring 4x5 inches in its greatest diameters, the long diameter being transverse.

Jan. 8, 1906. The tumor was considerably enlarged since last examination; it consisted distinctly of two parts, divided by a slight, nearly vertical groove, the inner part being larger and more diffuse, the outer part more prominent. Approximate measurements at this time were: Longest vertical measurement, 4½ inches; longest transverse, 6½ inches.

Operation.—Jan. 8, 1906, an incision nearly vertical was made over constriction between masses of the tumor. The constriction was found to correspond to the inner border of the sartorius muscle. This was pulled aside, the sac incised and a quart or more of blood and fibrin turned out. The sac was cleansed and scrubbed. The sac walls were indefinite. Openings were sought and proximal opening was found at the upper end of the incision, hardly more than a quarter of an inch beneath the skin; it had been slightly cut in opening the sac. The intima had become detached from the middle coat and looked like a vein within the lumen of the artery, protruding slightly beyond it. An attempt was made to tie this separately, but the ligature cut through. The distal opening was found fully two and a half inches away from the proximal opening, lying slightly deeper, but presenting nothing unusual in appearance. The openings were then closed by chromic gut sutures and reinforced. On account of the openings being so superficial, the incision was greatly narrowed when these were closed. Approximation of the inner part of the sac was accomplished by retention sutures of chromic gut, four in number, passed from skin to sac, through floor of sac, back through the skin and tied over gauze pads. The outer part of the sac was not so treated, because of its small size and because I thought that compression from without would accomplish the desired result. Hemostasis was perfect. The incision was closed without drainage.

Postoperative History.—The patient's temperature and pulse were normal throughout. The wound was dressed on the seventh day and two or three drams of seropurulent fluid escaped. This was found to come from the outer part of the sac, or that part which had not been occluded by retention sutures. A gauze drain was inserted and the wound redressed daily, as the discharge in a few days had become entirely purulent. Twenty-one days after the operation the discharge had ceased and the wound healed. There was never any symptom of impaired circulation.

Feb. 22, 1906. Patient has been home three weeks and reports himself "well."

July 6, 1906. Patient is well.

DISCUSSION OF OPERATIVE PROCEDURES.

For convenience of consideration, it may be stated that the method of intrasaccular suture of aneurisms has developed three distinct procedures: 1. Intrasaccular occlusion, the Matas operation; 2. Intrasaccular repair; 3. Intrasaccular reconstruction.

1. Intrasaccular occlusion is, in most cases, the method of choice, being adapted to fusiform aneurisms or those presenting two openings within the sac, also to those sacculated aneurisms in which the single opening is very large. It is the method first employed by Matas and the method from which the other two are derived. The distinctive features of this operation consist in closing the mouths of the artery within the sac by means of closely placed catgut stitches, reinforcing the same by a Lembert suture embracing the walls of the sac, and finally, by bringing together all of the remaining sac wall and holding it together by means of retention sutures. This method has been so successful on the face of the returns that there seems but little excuse for any derivative operations except on theoretical grounds.

2. Intrasaccular repair, as its name would indicate, is the application of intrasaccular suture to the repair of the ruptured artery. It is applicable only to sacculated aneurisms, or to those presenting a single opening within the sac. It consists in closing the opening of the artery into the sac by means of Lembert sutures, and encroaching on the lumen of the vessel by utilizing the sac wall contiguous to the opening for this purpose.

This operation is applicable to both true and false aneurisms, and the record of five cases so treated without any of the usual unfavorable sequelæ would seem to show conclusively that this operation has a place in the treatment of aneurisms.

I mentioned false aneurisms because sacculated aneurisms of directly traumatic origin (gunshot wounds, stab wounds, etc.) belong usually to this class. Leave these cases alone, and if they do not bleed to death, the cells of the connective tissue confining the hematoma will take on endothelial characters and there will be formed an aneurismal sac, a false one it may be, but one that will adapt itself to plastic usages.

3. Intrasaccular reconstruction is the third procedure. In some cases of fusiform aneurisms, those having two openings within the sac, the advisability of attempting to restore the arterial wall was, and is still under consideration by some. In reporting my first case of aneurism treated by endoaneurismorrhaphy, I disapproved of such attempts on theoretical grounds. This adverse opinion has been strengthened by my further observation of the interiors of aneurisms and by the failures of attempts as reported by Matas, himself, in his collection. To my mind it is irrational to conceive that by sewing together the remains of a deceased, worn-out, broken-down vessel, one is going to get an artery. Follow the so-called successful cases and in all, unless as may happen, a thrombus forms at the site of the suture I predict recurrence sooner or later. The suggestion that reconstruction of the parent trunk in cases of fusiform aneurisms may be tried as a temporizing expedient, seems to me to be contraindicated, unless it be in cases of abdominal aneurisms; but even here I should prefer to occlude. I should not be surprised at any time to learn that the abdominal aorta had been successfully occluded by intrasaccular suture. I certainly believe that intrasaccular occlusion offers most to the victims of aneurism of the abdominal aorta. Again, as regard intrasaccular reconstruction, I regret that this method was ever suggested by the author of endoaneurismorrhaphy because the failures which are bound to follow the one will keep the other from at once occupying the place it deserves. Careless reviewing in the medical journals is responsible for many misconceptions as regards intrasaccular suture; a glaring example of such misunderstanding is to be found in an article[2] by O. von Frisch on the treatment of peripheral aneurisms, in which, after giving the results in nineteen cases operated on in the clinic of Professor von Eiselsberg, he divides the treatment into non-radical and radical. The Matas method is classed as non-radical and is disposed of thus:

2. Archiv. f. klin. Chir., vol. lxxix, No. 2, 1906.

"Von den in neurer Zeit empfohlener Operationsmethoden verdient die von Matas angegebene, wonach die Gerinnsel aus dem Aneurisma entfernt werden und aus dem Rest des Sackes mit Catgutnaht ein neues Arterienrohr gebildet wird, durch das Bestreben die normalen Verhaltnisse wieder herzustellen, besondere Aufmerksamkeit."

The reviewer regards the method as irrational and unsafe. The report in itself is interesting as showing the results obtained by a single operator, employing methods other than intrasaccular suture, viz. ligation, or extirpation or some modification thereof. The number of cases treated was 19; gangrene occurred in 2 cases; local necrosis in 4; contraction of knee in 1; not heard from, 3; recurrence, 1; death, 1.

Compare this with the results obtained in thirty cases of aneurisms treated by sixteen surgeons employing the intrasaccular suture.[3] The number of cases treated was 30; 21 of these cases were treated by intrasaccular occlusion; 5 by intrasaccular repair; 4 by intrasaccular reconstruction.

Among the twenty-one cases of intrasaccular occlusion, there were no deaths from operation, no recurrence, no gangrene, and only one instance of local necrosis. Among the five cases of intrasaccular repair, there were no deaths from operation, no gangrene, no local necrosis, no recurrence. Among the four cases of intrasaccular reconstruction, there were no deaths from operation, no gangrene, or local necrosis, but there were two recurrences (one requiring amputation, the other a secondary intrasaccular occlusion).

These results speak for themselves. Of course, as cases multiply some failures are inevitable, but facts and figures seem to show that by means of intrasaccular suture they will be reduced to a minimum. In conclusion, I would say that I have found the method simple and easy of performance, and I intend to employ it in every case of operable aneurism I may have, outside of the chest; unless there be some positive contraindication.

ANEURISM: OPERATION, RECOVERY.

JAMES R. YOCOM, M.D.
TACOMA, WASH.

Patient.—F. M., aged 29, German by birth, left the U. S. Navy seven years ago and since then has worked as longshoreman and as tapman at the smelter.

History.—He gives a doubtful history of syphilis in 1898. In February, 1905, he was burned on the chest and face (first degree) and the right upper arm (second degree).

On St. Patrick's day, 1900, he had a row with the police in a dance house. He slipped and struck his left knee on the edge of a deep wooden gutter; slept in the police station on the cement floor (drunk), and the next morning his leg (back of the knee and calf), was "swollen as big as his thigh." He went to the hospital; there was no mark or bruise on the leg, but it was swollen from the back of the knee up to the back of the thigh, and remained so (in spite of massage and liniment) for nearly seven weeks. When he left the hospital at that time the general swelling had gone down, except for a "swelling about the size of a hazel nut," in the left popliteal space. It was stated that: "Now and then his leg hurt him a little, but he was apparently well except for the slight swelling."

Some time in the last of January, 1905, he noticed that his leg became a little stiff after sitting still and that the lump was growing more rapidly. It was then the size of a walnut. (Then he was burned, as stated above, and was in the hospital.) In September, 1905, the lump was decidedly bigger and he was in misery all the time—"could count the pulse beats in the swelling." The calf of the leg has always been a little larger since the injury five years ago—but since January, 1905, it has been decidedly larger, and is now much larger than the right, and especially when he walked it had a tired feeling, and he sometimes had to stop and rest.

Examination.—He was a well-built, well-nourished man, in good general physical health. A swelling back of the knee occupied the popliteal space, which bulged backward so as to make a smooth convex surface from side to side, instead of the normal scaphoid depression. The swelling pulsated in all directions synchronously with the pulse, and a well-marked bruit could be heard over it. The left leg below the knee was nearly one inch larger in circumference than the right, and he complained of the full tense feeling of this leg, particularly when he first goes to bed at night.

Operation.—Oct. 30, 1905, with the assistance of Drs. Green and McCreery, I operated on him at the Fanny C. Paddock Memorial Hospital at Tacoma. A tourniquet was placed around the left thigh, tightly enough to control the circulation, but it was thought better to pass a provisional loop around the popliteal artery at its origin; by drawing on this loop the pulsation could be stopped without help from the tourniquet.

I cut directly down on the aneurism sac (pushing the nerve to one side) and having thoroughly exposed it to view on the posterior surface, opened it from top to bottom, allowing some blood and some recent clots to escape. I then removed a considerable quantity of old, hardened fibrinous blood-clot which reinforced the wall of the sac proper, forming a dense, firm lining which was closely adherent to and separated with difficulty from the true wall. The sac, when thoroughly empty, was about as large as a duck egg, and showed very clearly on its deep surface two main openings from one and one-half to two inches apart, respectively, to the proximal and distal portions of the popliteal artery; there were also several other openings into branches. There was no difficulty in constructing an artery from the wall of the sac; no tube was used to secure the proper caliber. A full curved needle and continuous chromic No. 1 catgut suture was used.

After two rows of continuous suture had been placed, the assistant slacked up on the tension loop used to control the hemorrhage and allowed blood to flow through the newly made vessel; it leaked considerably between the stitches at the distal end, showing me where more stitches closely placed were needed. This was done, the circulation was tried again and found satisfactory. Perhaps had this test been made and the weak spots reinforced by other operators their results would have been satisfactory and permanent.

Instead of folding and refolding the superfluous parts of the wall of the sac to reinforce the suture line of the newly made artery, the redundant walls of the sac were sewed together by continuous layer sutures of catgut to secure extensive reinforcing approximation of the endothelial surfaces outside of the original suture line, being careful at the same time to close the openings of the smaller arterial branches passing from the sac. Loosening the control loop, which the assistant had held throughout the operation just tightly enough to prevent hemorrhage into the sac, pulsation was immediately felt, plainly and distinctly in the dorsalis pedis artery. The deeper wound was closed with tension sutures of silkworm gut and the skin by horse hair. The leg and thigh in full extension were enclosed in a voluminous cotton dressing with a snugly placed bandage and a long posterior splint.

Result.—There was an uninterrupted recovery and in three weeks the man walked out of the hospital; his only complaint was a swelling of the leg, which, though much less than before the operation, still persisted and appeared to be due to the varicose condition of some of the veins—due to the original obstruction from pressure of the aneurism.

Remarks.—Eight months after the operation the result of the operation was apparently perfect.

This Matas operation is remarkably simple and efficient—characteristic of the work of a master mind.

3. Matas: Trans. Amer. Surg. Assoc., 1905.

New and Non-Official Remedies

THE FOLLOWING ARTICLES HAVE BEEN TENTATIVELY ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR INCLUSION IN THE PROPOSED ANNUAL, "NEW AND NON-OFFICIAL REMEDIES." THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT, BUT TO SOME EXTENT ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE FINAL ACCEPTANCE AND PUBLICATION IN BOOK FORM.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(*Continued from page 939.*)

BROMIPIN.

TEN PER CENT. BROMINIZED SESAME OIL, MERCK.

Bromipin is a bromine addition product of sesame oil, containing 10 per cent. of bromine in organic combination.

It is prepared by the action of bromine chloride on sesame oil, in sufficient quantities, theoretically calculated, to produce the required brominization.

It is a yellow, oily liquid, having a purely oleaginous taste, and having a sp. gr. of 0.995 to 0.997.

If to 1 Cc. of bromipin in 10 Cc. of chloroform a few drops of phenolphthalein solution are added, the addition of one drop of half normal potassium hydroxide V. S. should produce a red color (limit of acidity). Estimation of bromine: 1 Gm. of bromipin is boiled with a solution of 2 Gm. of potassium hydroxide in 10 Cc. of alcohol until saponified. The solution is evaporated on a water bath, the residue is charred and the char is repeatedly extracted with small portions of water, and these are passed through a filter. To the filtrate 5 Cc. of nitric acid, 15 Cc. of tenth-normal silver nitrate V. S. and 1 Cc. ferric-ammonium sulphate test solution are added and the excess of silver nitrate is determined with tenth-normal ammonium sulphocyanate V. S. 1 Cc. tenth-normal silver nitrate = 0.007936 Gm. of bromine.

Actions and Uses.—Bromipin acts like the bromides, but as it yields its bromine more slowly it is thought to have less tendency to produce brominism. The combination is not broken up in the stomach, but a portion of the bromine is split off as soon as the oil enters the intestine. The oil with the remaining bromine is easily absorbed, and, similarly to other fats, is largely deposited in the tissues, where it is slowly split up. It is said to be more lasting in its action than the bromides.

Dosage.—4 Cc. (1 fluidram), increased in cases of epilepsy to from 8 to 32 Cc. (2 to 8 fluidrams); in emulsion with peppermint water and syrup, or pure, flavored with oil of peppermint.

Manufactured by E. Merck, Darmstadt. (Merck & Co., New York). German patent No. 96,495.

BROMIPIN—33 1-3 PER CENT.

A 33 1-3 per cent. brominized sesame oil.

This preparation is also offered in capsules containing each 2 Gm., and as tablets of bromipin (bromipin solidum saccaratum) containing 1.2 Gm. of 33 1/3 per cent. brominized sesame oil, corresponding in bromine content to a teaspoonful of bromipin 10 per cent.

Manufactured by E. Merck, Darmstadt. (Merck & Co., New York). U. S. patent No. 774,224; German patent, No. 150,763.

BUTYL-CHLORAL HYDRATE.

TRICHLORBUTYLIDENE GLYCOL. CROTON CHLORAL HYDRATE. CHLORAL BUTYLICUM.

This compound, $CH_3.CHCl.CCl_2.CH(OH)_2 = C_4H_7O_2Cl_3$, is official in the British Pharmacopeia as Butylchloral Hydras.

Actions and Uses.—Its action is similar to that of chloral, except that it is said to be less depressing and more analgetic. It has been especially recommended for facial neuralgia.

Dosage.—0.3 to 1.3 Gm. (5 to 20 grains).

CALCIUM ICHTHYOL.

A derivative of ichthyol in which calcium is substituted for ammonium.

It is a brown, tasteless powder, insoluble in water, and containing 2.5 per cent. of calcium.

Manufactured by the Ichthyol Co., Hamburg (Merck & Co., New York).

CALOMELOL.

COLLOIDAL CALOMEL.

A soluble colloidal form of calomel, containing albuminoids.

According to the patent it is prepared by acting on a solution of sodium chloride in presence of a proteid with mercurous nitrate and precipitating the water soluble colloidal calomel by means of alcohol. The precipitate is washed with alcohol, redissolved in water with the aid of a little alkali, and from this solution the colloidal calomel is obtained either by evaporation or by precipitation with alcohol.

It forms a white-gray, odorless and tasteless powder, containing 80 per cent. of mercurous chloride and 20 per cent. of proteids. It is soluble in water, forming an opalescent solution; insoluble in alcohol, ether and benzene. It is precipitated from its aqueous solutions by acids, the precipitate being redissolved by alkalies.

It is incompatible with soluble hydroxides, carbonates, iodides, oxidizing agents, etc.

Actions and Uses.—Its action is the same as that of calomel, but it is claimed to be superior because of its solubility in water, acting more rapidly and efficiently. Calomelol is claimed to be non-irritant and particularly non-toxic. The indications for its use are the same as for calomel.

Dosage.—Internally the same as calomel. Externally it is used as a dusting powder, mixed with an equal quantity of starch or of a mixture of starch and zinc oxide, or in the form of calomelol ointment. It should be guarded from the light.

Manufactured by The Heyden Chemical Works, New York. U. S. patent No. 740,855. U. S. trademark.

CALOMELOL OINTMENT.

An ointment containing 28 per cent. of mercury in the soluble form of calomelol (which see) and 2 per cent. in the insoluble form.

It is prepared by combining 45 parts of calomelol with sufficient lard to make 100 parts.

Actions and Uses.—It is a substitute for mercurial ointment, over which it has the advantage of cleanliness, and it is claimed to be distinctly superior as an inunction in syphilis, etc.

Dosage.—6 Gm. (90 grains) daily for inunction in syphilis.

Manufactured by The Heyden Chemical Works, New York. U. S. patent No. 740,855.

CASCARA EVACUANT.

A preparation said to contain a bitterless glucoside, obtained from the bark of *Rhamnus purshiana*, with aromatics.

The bark, which has been stored two years or more, is exhausted with water, the liquid extract concentrated, and the bitter glucosidal substances removed, leaving the bitterless principles which constitute the active ingredients of the preparation.

It is a dark red brown liquid, with an odor and taste suggesting licorice, it being slightly and persistently, but not unpleasantly, bitter.

The glucosidal nature may be shown by the following: If precipitated from the aqueous alkaline solution by acids and redissolved in water it does not reduce Fehling's solution, but if redissolved in water, boiled with an acid and neutralized, it reduces that reagent. The glucoside is soluble in water, slightly soluble in alcohol, insoluble in ethyl acetate, chloroform, ether, benzol and benzin. The aqueous solution is colored red by alkalies, the alkaline solution may be partially precipitated by acids. Solution of lead subacetate precipitates the glucoside from its aqueous solution.

Actions and Uses.—It is claimed that this preparation possesses the laxative properties of cascara sagrada without the bitterness which characterizes the ordinary extract. It is recommended for the treatment of chronic constipation, for which cascara sagrada is one of the best medicinal agents.

Dosage.—As a laxative, 0.6 to 1 Cc. (10 to 15 minims) three times a day; as a purgative, 1.3 to 2 Cc. (20 to 30 minims) morning and evening. 4 Cc. (1 fluidram) may be given in obstinate cases.

Prepared by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

CASCARA TONIC LAXATIVE GLOBULES

Each globule is said to contain 0.2 Gm. (30 grains) of the bitter glucosides of *Rhamnus Purshiana* suspended in a bland fixed oil, to which aromatics have been added.

The bark of *Rhamnus Purshiana*, stored not less than two years, is exhausted with water, the liquid evaporated and the extract treated with a solvent which extracts the bitter glucosides, which are mixed with a fixed oil and dispensed in capsules.

The capsules are nearly black in color and contain a fixed oil in which the extract is partly suspended, partly precipitated as a sticky, black extract of an intensely and persistently bitter taste. The odor is fragrant.

The fixed oil may be removed by ether in which the glucosidal bodies are almost insoluble, and the nature of the latter may be tested as follows: Its hydro-alcoholic solution does not reduce Fehling's solution at once, but after boiling the precipitated glucosides with dilute acids and neutralizing, the resulting product does reduce that reagent.

The aqueous solution is colored purplish red by alkalies; from the alkaline solution a yellow substance is precipitated by acids. Solution of lead subacetate precipitates the glucoside from its aqueous solution. The glucosides are partially soluble in water, ethyl acetate, and in 25 per cent. alcohol, entirely soluble in alcohol of from 50 to 80 per cent. by volume, only slightly soluble in chloroform, ether, benzene or petroleum benzin.

Actions and Uses.—The manufacturers claim that it combines the laxative action of cascara with tonic properties of the bitter principle with the advantage of concealment of the disagreeable taste.

Dosage.—One or two globules to be taken before retiring.

Prepared by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

CHINAPHENIN.

PHENETIDIN QUININECARBONIC ACID ESTER.

Chinaphenin, $CO(NH.C_6H_4OC_2H_5)(C_{20}H_{23}N_2O_2) = C_{29}H_{33}N_3O_4$, is the quinine carbonic acid ester of phenetidin.

It is prepared by the action of quinine on p-ethoxyphenyl carbamic acid chloride.

It is a white, odorless and tasteless powder, difficultly soluble in water, but readily soluble in alcohol, ether, chloroform, benzene. Acids dissolve it with the formation of soluble salts.

It gives the thalleioquin reaction for quinine salts, but forms a yellow herapathite.

It is decomposed by acids with the liberation of quinine.

Actions and Uses.—Chinaphenin combines the antiperiodic properties of quinine with the analgesic power of phenacetin, with the advantage of tastelessness and asserted freedom from symptoms of cinchonism produced by the administration of the two remedies in simple mixture. It is recommended in febrile diseases, especially la grippe; in spasmodic conditions, such as whooping-cough; in certain forms of malaria and in neuralgia.

Dosage.—Adult: 0.3 to 0.6 Gm. (5 to 10 grains) ordinarily, or 1.5 to 2 Gm. (22 to 30 grains), given in two doses as an antipyretic in neuralgia and malaria; in whooping-cough, 0.13 to 0.3 Gm. (2 to 5 grains), according to age.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 637,839. Vereinigte Chininfabriken. Zimmer & Co., Frankfurt a. M. German patent No. 109,259.

CHLORBUTANOL.

TRICHLOR-TERTIARY-BUTYLALCOHOL. ACETONE-CHLOROFORM.

Chlorbutanol is 1,1,1-trichlor-2-methyl-propan-2-ol, $CCl_3.C(OH)(CH_3).CH_3 = C_4H_7OCl_3$, produced by the reaction of acetone on chloroform.

Made by the action of caustic alkalies on a mixture of chloroform and acetone. It is a white, crystalline, volatile compound having a camphoraceous odor and taste. It is soluble in water (8-1000), in oils, and glycerin; very soluble in alcohol, ether, benzin, glacial acetic acid, chloroform and acetone.

Actions and Uses.—It is said to be absorbed unchanged, but to be decomposed in the body. It is a local anesthetic with an action weaker than that of cocaine, but sufficient to prevent vomiting from gastric irritation. Its antiseptic action is said to be fifteen times as strong as that of boric acid. It acts on the central nervous system similarly to chloral, and although the claim has been made that hypnotic doses are without effect on the circulation and respiration, independent observers have described a fall of blood pressure and interference with respiration in animals, and consider it fully as dangerous as chloral. In man 100 grains caused severe symptoms, but recovery occurred. It is claimed that no habit is induced, but this may be referable to its restricted employment. It is recommended as a mild local anesthetic, in dentistry, etc., as a preservative for hypodermic solutions, for insomnia, vomiting, and for spasmodic conditions. It is also said to be useful as introductory to general anesthesia, lessening excitement and nausea.

Dosage.—The dose is from 0.3 to 1.5 Gm. (5 to 20 grains) dry or in capsules. Hypodermically as a local anesthetic a saturated aqueous solution may be used.

CHLORETONE.

A name applied to chlorbutanol, which see.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

CHLORETONE INHALANT.

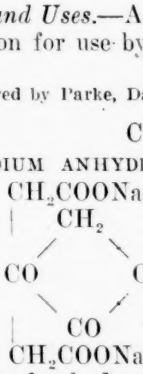
Chloretone (chlorbutanol), 1 Gm.; camphor, 2.5 Gm.; menthol, 2.5 Gm.; oil of cinnamon, 0.5 Gm.; refined liquid petroleum, 93.5 Gm.

Actions and Uses.—An anodyne, antiseptic, and emollient solution for use by inhalation as a very fine spray or nebula.

Manufactured by Parke, Davis & Co., Detroit, Mich. U. S. trademark.

CITARIN.

SODIUM ANHYDROMETHYLENE CITRATE.



Citarin, $Na_2C_7H_6O_7$, is the normal sodium salt of anhydromethylene-citric acid.

Anhydromethylene-citric acid is obtained by reacting on citric acid with paraformaldehyde (Schering, German patent 129,255) or with chlormethyl alcohol, CH_2ClOH (German patent 150,949). The sodium salt is obtained by treating the acid with sodium hydroxide solution and precipitating the resulting salt with alcohol (U. S. patent 715,329).

It is a white, granular, somewhat hygroscopic powder, having a faintly saline and acidulous taste, and a slightly acid reaction. It is readily soluble in about 1.5 parts of water, but insoluble in alcohol. Its solutions split off formaldehyde when heated, particularly in the presence of alkalies, and mineral acids separate from its concentrated solutions methylenecitric acid.

Formaldehyde can be demonstrated by means of Jorrisson's reaction, or by sodium nitrite and sulphuric acid, or by silver nitrate and soda solution.

It is incompatible with acids and alkalies and is decomposed by heat.

Actions and Uses.—This is one of the compounds which it is claimed increase the elimination of uric acid by forming very soluble compounds with that substance.

It has been recommended for gout and chronic rheumatism.

Dosage.—1 to 2 Gm. (15 to 30 grains), largely diluted with water.

Manufactured by Farbenfabriken, vorm. Friedr. Bayer & Co., Elberfeld, Germany (Continental Color & Chemical Co., New York). U. S. patent No. 715,239.

(*To be continued.*)

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price.....Five dollars per annum in advance

[*For other information see second page following reading matter.*]

SATURDAY, SEPTEMBER 29, 1906.

HYPERSUSCEPTIBILITY AND TRANSMITTED IMMUNITY.

The valuable paper of Rosenau and Anderson on hypersusceptibility, which was presented at the recent session of the American Medical Association in Boston, and of which the authors' abstract appears in this issue, calls fresh attention to a most important "immunity reaction." We are all familiar with the occasional examples of individual and family hypersusceptibility which may be manifested against many drugs and certain infections. This is a natural hypersusceptibility. Since the time of Koch, however, facts concerning a peculiar acquired hypersusceptibility have been gradually accumulating.

The tuberculous individual, for unknown reasons, acquires a delicate susceptibility to an injection of tuberculin which the non-tuberculous does not possess. Experience in the immunization of animals with toxins and bacteria has brought to light other examples in which the immunizing process resulted in heightened susceptibility to the substance injected, rather than immunity. Animals which have endured prolonged immunization with tetanus or diphtheria toxin may suddenly prove intolerant to further immunization even with small doses, and death is not uncommonly the result of this acquired susceptibility. The seemingly paradoxical fact that liberal amounts of antitoxin may be present in the serum of such animals has furnished the subject of immunity with one of its knottiest problems. Behring described the condition as one of "histogenous hypersusceptibility" which manifested itself in spite of the presence of antitoxin in the blood. Wassermann explained it by the assumption that the immunization brings about a heightened "avidity" on the part of the cell receptors for the toxin, which is so great that the toxin combines with the cells rather than with the antitoxin which is present in the blood of the animal. Other examples of a similar character are known.

The hypersusceptibility which forms the subject of the paper by Rosenau and Anderson may or may not be identical in principle with that alluded to above. It is all the more striking in this respect, at least, that it involves an acquired susceptibility to a substance, horse serum, which in itself on first injection appears to be non-toxic. It seems to have been the experience of a number of investigators that animals do not stand prolonged immunization with various albuminous substances, although the latter have little or no toxicity when injected in single large doses. It is probable that the many fatalities which occur in the attempt to produce immune cytotoxic serums depend on a similar principle. Arthus, in 1903 (*Société de Biologie*) published observations showing the toxicity of repeated injections of horse serum into the rabbit. Pirquet and Schick had shown also the toxicity of a second injection of antitoxin or horse serum in relation to the "serum disease." It is learned from a recent publication by Otto[1] that Theobald Smith had noted the frequent toxicity of a second injection of horse serum as early as 1902, and it was through the suggestion of Smith that Otto undertook a study of the subject. That Smith's attention had been called to the phenomenon was also brought out in the discussion which followed the reading of the paper. This fact would seem to detract nothing from the originality of the work of Rosenau and Anderson, however, since they apparently encountered the phenomenon independently.

The results obtained by Rosenau and Anderson coincide in all essential respects with those of Otto. A study of the details of their experiments[2] indicates the thoroughness with which the work was conducted, and their conclusions are based on a very extensive material.

The phenomenon has a direct and important bearing on the serum disease of Pirquet and Schick, and throws probable light on the disturbing results which occasionally (rarely) follow the administration of antitoxin in man. They prove conclusively, as does Otto, that the untoward effects which may be caused by an antitoxic serum are absolutely independent of the antitoxin which the serum contains.

It is probable that a satisfactory explanation of the phenomenon has not yet been reached. That the hypersusceptibility is "histogenous" was demonstrated by Rosenau and Anderson; it is not a property which resides in the serum of the animals. The explanation offered by Vaughan in this discussion is interesting, but is difficult of proof.

The work is important not only because of its bearing on serum intoxication, but also because of its relation to the general subject of hypersusceptibility to infectious diseases. It is probable that the phenomenon, which seems destined to be known as the Theobald Smith phenomenon, in pursuance of the precedent set by Otto, will prove to be another instance in which a problem of primary theoretical interest may yield results of great practical value.

Other important work from the Hygienic Laboratory of the U. S. Public Health and Marine-Hospital Service

1. Das Theobald Smithsche Phänomenon der Serum Ueberempfindlichkeit, v. Leuthold Gedenkschrift, vol. 1.
2. Bulletin 29 of the Hygienic Laboratory, U. S. P. H. and M. H. Service.

is found in the last bulletin, just issued.[3] In this bulletin Anderson confirms the work of some previous observers (Wernicke and others) concerning the ability of the female guinea-pig to transmit an original immunity to diphtheria to her offspring. In the experiments conducted by Anderson, the surprising observation was made that a guinea-pig which had been treated with a mixture of diphtheria toxin and antitoxin transmitted distinct immunity to her offspring, whereas animals which had been treated with the toxin alone transmitted no such immunity. This seems not to have been explained satisfactorily as yet. The transmitted immunity appeared in each of four successive litters, but was not passed into the third generation.

Emphasis is placed on the importance of this transmitted immunity, as well as on the transmitted hypersusceptibility to serum (Rosenau and Anderson) in the testing of toxins and antitoxins by manufacturers of serums. The value of an antitoxin may be greatly overestimated, on the one hand, by testing it on a guinea-pig which has inherited an immunity to diphtheria from its mother; on the other hand, the results of the tests for bacterial or toxic impurities may be equally erroneous if they are performed on guinea-pigs which have inherited a fatal susceptibility to serum from a "used" mother.

It is worthy of comment that the government, in maintaining laboratories for practical purposes, has found it necessary to place these laboratories under the direction of men who have the investigative spirit, and to encourage this spirit by providing facilities for pure research. Experience has taught well the lesson that the practical when thoroughly divorced from the theoretical ceases to be practical.

A NATIONAL DEPARTMENT OF HEALTH.

The government is designed for the welfare of the people, and in a government like ours, of the whole people, one of the first considerations in the people's welfare is their health; material resources are secondary. Without an able-bodied race, no country can prosper, and it is the favoring health conditions of the temperate zones that have made the races inhabiting them the rulers of the world. With the artificial conditions of civilization, however, the problem of the public health comes more and more to the front, and the old *laissez faire* methods show their deficiencies. More than one country at the present time is seeking methods and means to check the degenerative tendencies that threaten them, and the question whether our civilization is to last seems largely to depend on the success of these efforts.

The paper of Professor Norton, published in this issue of THE JOURNAL, puts forth the economic side of the question as fully and fairly as any publication of its compass that has lately appeared. Coming from a non-medical man, it is an encouraging sign. Professor Norton shows how great a waste exists at the present time from preventable deaths, sickness and conditions of physical and mental inefficiency, due largely to the lack of a wise general governmental supervision. We have our pure food laws and our quarantine laws which go a certain way toward checking these evils, but they are, after all, only a beginning of what is needful. We have a great deal of government in regard to health matters, but it is local, unsystematized and often conflicting in different sections of the country and is distributed also, so far as it relates to national affairs, under different departments of the government, thus preventing the best results. The plea for a national department of health could be, to a certain extent, met by the consolidation under a single head of already existing bureaus without a great additional expense, but completeness and full efficiency would demand more than this.

The plan laid out by Professor Norton covers a much broader field, and, while it may not be absolutely realizable at once, the consolidation of the existing bureaus would be a great step in advance and could be enlarged on as wisdom and experience would dictate. The work done on less than a million and a half by the Public Health and Marine-Hospital Service is itself an indication of what a wise expenditure of only a moderate amount of public funds can accomplish. The protection of our southern coast from yellow fever, which it has practically accomplished, is worth annually many times the whole cost of that department, but this is a local service which principally benefits a section and not the whole country. An intelligent direction of health matters, including far more than that bureau at present has under its control, would be of still more widespread and general advantage. A considerable amount of the work done under the Agricultural Department, which is of the utmost value, including, for example, the admirable work of Dr. Wiley and that now assigned it under the pure food law, should properly be consolidated with the sanitary functions of other departments. Then a cabinet officer with expert knowledge of health matters could administer all these and other new departments to much better advantage than under the present system.

The value of an intelligent health administration to the power of the nation in war was never better exemplified than in the recent Russo-Japanese war, and the victories of peace are likewise dependent on the preservation of the national health efficiency. It is not only the man behind the gun, but the man behind everything else tending to national prosperity that counts, and the sound mind in the sound body is a real element in national as well as individual prosperity. How far criminality is concerned with disease is an important social question, and we know what the tendencies of certain sociological thinkers are on this matter. Leaving all

3. Maternal Transmission of Immunity to Diphtheria Toxin and Hypersusceptibility to Horse Serum in the Same Individual. Bulletin 30, Hygienic Laboratory, U. S. P. H. and M. H. Service.

extreme ideas aside, there is no question but that a healthy people, other things being equal, is more amenable to moral improvement than one in whom disease conditions prevail. A department of health, exercising a wise supervision over all subjects of national bodily welfare, could thus indirectly, at least, be a valuable adjunct to good government.

The importance of health matters to any civilized country is greatly enlarged at the present time by the vastly increased facilities for communication, and sanitary questions of international importance are constantly arising. The importance of the office is still further magnified and its necessity as a special department with a cabinet officer at its head is strongly accented by the international complications arising involving sanitary questions of the highest importance. Moreover, as this country becomes more and more a world power the scope of such a department is greatly widened. For these, in addition to the economic reasons so well stated by Professor Norton, the advisability of such a department is all the more obvious. We can hardly add to the economic argument so well stated in the article, excepting by emphasizing the important truth that what is right is also profitable. Righteousness exalteth a nation, and governmental attention to the physical salvation of the people is, if anything else is, in the line of practical and political righteousness.

THE AMERICAN MEDICAL DIRECTORY—A PRELIMINARY STATEMENT.

One of the apparently new lines of work inaugurated by the American Medical Association is the compilation and publication of a Medical Directory, based on material drawn from the official records of the various state licensing boards. We say "apparently" advisedly, for this feature of the Association's activity is only an extension of a work in which it has always been interested, namely, the elevation of the personnel of the profession and the safeguarding of the public health through the elimination of those who, either on account of lack of proper training, or owing to deficient mental or moral endowment, are unfit to practice medicine. Almost from the time of its organization the Association has striven for the accomplishment of these ends.[1] It has repeatedly declared in favor of the state laws regulating the practice of medicine and establishing examining and licensing boards. It has always favored the enforcement of these laws.

The practice of medicine in a civilized community is something more than the pursuit of a private business or calling. As Huxley showed, the physician bears a peculiar relation to the state, which justifies the civil government in demanding a certain amount of preparation and a demonstration of fitness from each candidate before allowing him to practice medicine. This principle, comparatively new in Huxley's day, is now universally recognized. Each state and territory now has a law establishing and maintaining a board for this purpose. No one is allowed to assume responsibility for the lives and health of the public, unless he is first granted a license by a board of the state in which he desires to practice. This law is of benefit to the profession by keeping the unfit out of its ranks; it is of much greater benefit to the public by protecting it against the untrained and the unprincipled.

The regulation and protection of public health is one of the police powers reserved by the constitution to the state. Each board, therefore, has jurisdiction only over the territory of the state which created it. Any coöperation between state boards is, necessarily, purely voluntary. It is to the interest of the public as well as of the profession that there be as much uniformity as possible in the standards of these boards and that each be cognizant of the work of the others. Our state laws regulating medical practice are, to-day, an absolute necessity. It will also be conceded that state licensing boards have wrought a marked improvement in the medical profession and have also been of great benefit to the public. The need of to-day, however, is closer relation, more coöperation and greater uniformity among the state boards. Such coöperation must be voluntary and can only be brought about by demonstrating the value which each board can be to the others. Since the work of the licensing body is the acceptance of the fit and the rejection of the unfit, the greatest service which any board can render is to share with the other boards the knowledge and experience it has gained, regarding those whom it has accepted or rejected. Some attempts have been made along this line. Of 70 licensing bodies, 22 have published, at different times, a list of those licensed to practice in their state. Some of these reports are excellent and are a credit to the boards issuing them; but their circulation usually has been confined to the states which issued them and to members of other boards to whom they have been sent. In some cases, they have been buried in the annual reports of the board. With a few exceptions, they have been published at long intervals and the various editions have not been accessible to the public nor, in many cases, to the profession. With limited means and large responsibilities, the average board is not able to expend much money in revising or printing its records.

Now, a law is of no value unless it can be enforced. It can not be enforced unless it is possible to detect violations of it. There must, therefore, be some ready means of ascertaining whether or not a given physician has complied with the law. In some states, it is practi-

1. Dr. Bartles introduced the following resolution: "Resolved, That the union of the business of teaching and licensing in the same hands is wrong in principle and liable to great abuse in practice. Instead of conferring the right to license on medical colleges, and state and county medical societies, it should be restricted to one board in each state, composed in fair proportion of representatives from its medical colleges and the profession at large, and the pay for whose services as examiners should in no degree depend on the number licensed by them."—Proceedings A. M. A., May 5, 1846, vol. i, p. 19.

ally impossible to determine this point; in many more, it is difficult and expensive. In most states, in order to ascertain the legal standing of a physician, it is necessary to write to, or to call on, the secretary of the state board. In a number of states, even this would not suffice, since the records are kept by the various county clerks. In one state, there are 67 counties, each with its separate register of licensed physicians. In one of these counties, there are over 7,000 names on the records; in another county there are over 3,000. These names are entered in the order in which the applications were made, without alphabetical arrangement or index. To determine positively, whether or not a physician is licensed to practice medicine in this state might require the examination of every name on the 67 county records. Such an amount of work makes the enforcement of the law impossible. In another state, where, previous to 1890, a similar system of registration was in force, it would be necessary to examine the records of the state board, which only go back to 1890, and then to examine the records of each of the 22 counties in the state. Who is responsible for the enforcement of the registration law in states which depend on county officials for their records of medical practitioners? The county clerk is supposed to be, but his sole interest is the collection of a fee for each license which he registers. Since it can not be proved that a given individual has violated the law, it is manifestly impossible to convict him.

The weak point in our system of medical legislation is that each state is a separate unit, keeping its own records, issuing its own licenses and publishing its own roster, if it does so, without any reference to other states. It has been recognized that immense good would result if all the information collected by the various state boards could be properly arranged and placed at the disposal of all of the boards, to be used for the benefit of the profession and the public. But there has been no systematic effort made to inaugurate such a work. It is evident that it is fundamental and that it must eventually be done by some one. It is obviously unreasonable to expect any one state board to assume the labor and expense of this work. It is equally out of the question to expect the general government to undertake it. It is too expensive and unremunerative for private enterprise. The medical profession itself, therefore, is the only agent left to undertake it. It has hitherto been impossible for the profession to undertake this task, owing to the lack of funds and incomplete organization. These two obstacles having been removed by the work of the past few years, it was decided at the Portland session that the time had come for the organized profession to take up this needed reform.

Accordingly, in September, 1905, correspondence was entered into with the secretary of each licensing board; the objects of the Association were clearly set forth; the advantages which would accrue to each board were explained and the coöperation of each board was requested. Without exception, this was given cheerfully and willingly. Complete copies of the official records of the board, containing the names of all physicians licensed to practice medicine, were obtained. These names were properly arranged and indexed. In states having a county system of registration, it was necessary to secure copies of the records from each county clerk. This work showed clearly the great need of a reform such as the Association had undertaken. Almost without exception, those records which were kept by county clerks or by lay officials were found to be in a deplorable condition of inaccuracy and incompleteness. In some cases, obtaining the desired information entailed much labor and expense and required much patience. Eventually, however, complete copies of the records of all licensing or registering bodies were secured. At the same time, arrangements were made by which these records are kept corrected up to date, through reports furnished by the secretary of each board, following examinations.

Arrangements are also being made by which each secretary will send to this department information regarding physicians whose licenses have been revoked or who have attempted to deceive the board by means of false statements or by forged or altered diplomas or credentials. This matter will be distributed to each board by the Association. In this way, each board will profit by the experiences of all.

Turning now to the medical colleges, we find a condition similar to that which obtains among registering boards. There has been, heretofore, no central bureau for collecting and preserving information regarding medical graduates. When a college became extinct, its records were often irrevocably lost. There has been no way of verifying statements regarding graduates, and consequently, in many cases, both the public and the profession have been imposed on. Accordingly, arrangements have been made with the existing medical colleges by which the names of all graduates for the past five years have been obtained, thus supplementing a list of previous graduates already in the hands of the Association. Hereafter, the name of each new graduate, with biographical information regarding him, will be obtained by the Association at the time he receives his degree. This will thereafter be preserved in permanent form. Colleges that request it will be provided, at any time, with information in the possession of the Association.

It will thus be seen that the Association, in the last year, has compiled a complete list of legally qualified physicians and a fairly complete list of medical graduates. This material is now stored in the vaults of the Association. Such a work has never before been undertaken. This department of the Association is now in a position to supply information regarding practicing physicians either to the state boards or others. The immediate response of every one of the secretaries of the state boards shows that they appreciate the need of such

a work. The Association has established what is practically a central bureau of information regarding the medical profession of the entire country. It is now possible for the secretary of every state board, as well as every state health officer, to avail himself of any information in the possession of any of the 70 boards. The Association now has, for the first time in its history, a legal basis for the compilation and publication of personal and biographical matter relating to the profession.

It will thus be seen that the Directory is only a secondary and subsidiary matter, which is subordinate to a much greater work which the Association has undertaken. The American Medical Directory is a compilation of a part of the facts regarding each physician as they now appear on the records of the Association. The consideration of medical directories in general, as well as of the points of difference between the American Medical Directory and other directories, will be reserved for future discussion.

COMMERCIALISM AND DRUG ADULTERATION.

The New York City Board of Health has recently shown by careful investigation that a considerable portion of the drugs which have been sold in the past year and even those which enter into the composition of physicians' prescriptions are either below grade in quality or are absolute substitutions of cheaper for more expensive materials in order to secure more profit for the dealer. It is, of course, an extremely sad state of affairs when human life and illness and suffering are trifled with in this manner for the paltry difference in profits that may thus accrue. The discovery has given rise to no little pessimistic discussion in the newspapers, as if this were the first time that any such unfortunate lapse from rectitude had been noted and as if our generation were by that so much worse than any of its predecessors. The adulteration of drugs, however, has nearly always been a source of difficulty in the practice of medicine, and this is only another example of a very human tendency.

The reason for the present manifestation of human fallibility is not far to seek. In recent years druggists have come to be tradesmen much more than they used to be. The apothecaries were a guild in the olden times and are supposed to preserve a considerable degree of professional spirit. Unfortunately, the custom of selling various proprietary medicines at cut rates in order to attract custom has led more and more to the invasion of a thoroughly commercial spirit into the drug business. Not satisfied with cutting rates on "patent medicines," some druggists have advertised cut rates also in the filling of prescriptions. As a rule, this could be accomplished profitably only by purchasing drugs from the wholesaler at prices cheaper than they could be furnished if they were of the proper standard of purity, or else by substituting cheaper drugs for those named in many prescriptions. The wholesaler is to blame as much, if not more, than the retail druggist, and it is to be hoped that the punishment for the offences discovered will be meted out to the real culprits in the case.

It would be eminently desirable, however, that the modern druggist should make much more of a specialty of prescription filling than of the many side issues which now occupy so much space and attract so much attention in the apothecary shops. Physicians can do much to bring about an improvement in this matter by encouraging patients to take prescriptions to such pharmacists as properly maintain their professional dignity as apothecaries and do not allow the commercial spirit to obtrude itself unreasonably in their business.

STATE SOCIETY AUXILIARY COMMITTEE.

At the last meeting of the Ohio State Medical Association the following by-law was adopted: "At the annual meeting for the election of officers each component society shall appoint one of its members as a member of the Auxiliary Committee on Public Policy and Legislation, and the secretary shall send his name and address at once to the secretary of the State Medical Association. The Committee on Public Policy and Legislation of the State Medical Association shall formulate the duties of this Auxiliary Committee and supply each member with a printed copy." It is the intention to have this committee look after the interests of the public and of the medical profession by assisting in the suppression of the "patent-medicine" evil, prosecuting fraudulent and illegal practitioners by inaugurating a system of registration, abolishing medico-political partisanship from public office, and assisting the proper public authorities in the suppression of criminal abortion. The work of this committee is an important one, and by having its members distributed over all parts of the state the results of the work done in this direction by the state association will become more effective and far reaching than ever before. Other state societies may well follow in the footsteps of the Ohio association by providing for the appointment of similar committees. It is certainly a step in the right direction.

A MODERN SUPERSTITION.

It is usually supposed that nowadays education has practically done away with superstition, and that whatever manifestations of it are left are to be found only among the ignorant and almost exclusively among the foreign immigrants into this country who have not had the opportunities that have been provided here. The recent automobile race on Long Island, however, almost provided another striking example of the influence of superstition even on educated people. There were to have been fifteen contestants, but fortunately the number was reduced to twelve before the race actually took place. Last year, with more contestants in it, though the different machines were numbered in rotation, the number thirteen was not given out, because it was understood that the drivers objected to riding with so dread a

talisman on their cars. They are perfectly willing to risk their lives making records of over sixty miles an hour on an ordinary road, but they are not willing to take the awful added danger that would be incurred by identifying themselves with the number thirteen. It is well known now that most of the passenger steamers, at least those which leave the eastern ports of the United States, do not have state-rooms numbered thirteen because of the objection which many passengers have to traveling in such a room. Many of the hotels that have been built recently have eliminated the number thirteen from their series of rooms for a similar reason. Is it any wonder that with this senseless superstition still rampant, people should continue to think that various peculiar methods of treatment and even nonsensical remedies will relieve them of their pains and ills? What is needed, evidently, is not education in general, but specific training in a state of mind and a development of character that will prevent the domination of such foolish remains of the ignorance of former generations.

NEO-VITALISM.

A considerable portion of the recent opening address[1] of Professor Gotch before the Section on Physiology of the British Association for the Advancement of Science was given to an attack on "neo-vitalism." The principal point made against it was the objection to the admission that physico-chemical explanations must necessarily be insufficient to explain the vital phenomena, and the claim that such admission obstructs physiologic progress. This seems to us equivalent to a confession of weakness and, as it were, an inference that human knowledge is exhaustible or must be assumed so to be in order to encourage the workers. Why should the admission of the fact that there will always be something ahead of us to be explained be a discouragement to the physiologist any more than it is to the astronomer to recognize the fact that he can not look forward to the establishment of the limits of the universe or of infinite space? Has the work of those investigators who have admitted their limitations—men like Pasteur and Faraday, for example, not to mention a host of other workers—been any less fruitful in chemical and bio-chemical research than it would have been but for such recognition? It seems to us doubtful. It would be more modest in physiologists who oppose neo-vitalism so strenuously to profess a little agnosticism in the matter if they are unable to accept the unwelcome element of "mysticism" which they seem to think the doctrine involves. It would also be more scientific, it seems to us, to use less of the argument of expediency against the use of the term. It may be an assumption to say that life is always going to be unexplainable, and there are certain objections to the use of the term vital force which, we think, would be more properly made by the so-called mystics than by their opponents. It is, however, equally an assumption to claim that it will be thus explainable and is also lacking in proof.

1. Nature, Aug. 23, 1906.

Medical News

CONNECTICUT.

New Hospital for Waterbury.—It is announced that $31,006 has been raised for the erection of a Roman Catholic hospital in Waterbury and that the site for the institution has been purchased.

Communicable Diseases.—During August 4 cases of smallpox were reported from two towns; 45 cases of measles from 20 towns; 35 cases of scarlet fever from 22 towns; 2 cases of cerebrospinal fever from one town; 127 cases of diphtheria from 2 towns; 50 or more cases of whooping-cough in 19 towns; 213 cases of typhoid fever in 36 towns, and 37 cases of consumption in 21 towns.

August Deaths.—During August, 1,639 deaths were reported in the state, equivalent to an annual death rate of 19.5 per 1,000. The deaths from infectious diseases numbered 231, or 14.1 per cent. of the total mortality. The principal death causes were: Diarrheal diseases, 337; diseases of the nervous system, 156; consumption, 123; accidents and violence, 110; heart disease, 105; pneumonia, 44; whooping-cough, 39; typhoid fever, 30; diphtheria, 16; measles, 7; scarlet fever, 6; malarial fever, 5, and erysipelas and cerebrospinal fever, each 2.

DISTRICT OF COLUMBIA.

Physicians for the Poor.—The secretary of the district board of charities has recommended that an allotment of $8,030 be made for hiring 22 physicians, at the rate of $1 per day, and that $2,370 be allotted for medicines, nursing and other incidental expenses, for the next fiscal year, beginning July, 1907.

Must Not Drive Fast.—Dr. Milton H. Prosperi, Washington, brought before the district branch of the police court, charged with fast driving, claimed in extenuation that when a physician is making an emergency call he should be allowed to drive faster than the police regulations allow. He was informed that he must observe the law against driving at an excessive speed and was fined $20, which was paid promptly.

Typhoid Fever.—Washington is suffering from an epidemic of typhoid fever, which is remarkable, as it has come immediately on the completion of a three-million-dollar filter plant, whose purpose is to render the water supply pure and sanitary. Dr. Lloyd McGruder believes that the infection is due to a contaminated milk supply, but Dr. William C. Woodward, district health officer, takes issue with Dr. McGruder, and states that every plant from which milk is shipped into the district is systematically inspected by officers of the health department and that in the absence of a laboratory no bacteriologic examination can be made of the milk supply.

Hospital News.—Work is being pushed for the early construction of the Walter Reed U. S. A. General Hospital. The building, which is to cost $200,000, will be constructed of red brick, will be 193 feet long by 25 feet wide, and will be about 125 feet from the ground to the top of the central dome.——Potomac Hospital, which was organized in April last and opened to the public by the colored physicians of the city, for giving free medical treatment to the worthy poor, without regard for race, creed or sex, has proven to be too small for the needs of its applicants, and it is now the hope of the directors to equip and maintain a larger general hospital. More than 1,200 patients have been treated in the hospital up to this time.

GEORGIA.

Hospital Notes.—The city council of Columbus has advertised for bids for the removal of the city hospital from its present site to a more desirable location, and it is probable that an entirely new hospital will be erected with a nurses' training school in connection.——The Atlanta School of Medicine announces the opening of its own hospital, at the corner of Bartow and Cain streets, on October 1. Two wards, with accommodation for 16 patients, have been built during the summer.

College Notes.—The Atlanta School of Medicine opened for enrollment, September 15, and lectures will begin September 26. It has been decided by the faculty that all courses shall be in separate calendar years and the length of the term has been increased from six to seven months. The new building is practically completed and ready for use.——The new building of the Atlanta College of Physicians and Surgeons, erected at a cost of $75,000, will be ready for occupancy about October 1.——The Carnegie donation will be used in fitting up the old Southern College building, which is to be known in the future as the Carnegie Pathologic Institute.

Personal.—Dr. Marion M. Hull has been elected professor of materia medica and therapeutics at the Atlanta School of Medicine, vice Dr. Charles D. Hurt, deceased.——Dr. William S. Elkin has been elected professor of gynecology and obstetrics in the Atlanta College of Physicians and Surgeons, vice Dr. Hunter P. Cooper, deceased.——Dr. Frank M. Ridley, La Grange, has been appointed chief surgeon of the West Point Route, to succeed the late Dr. Hunter P. Cooper.——Dr. Karl H. Hall, Atlanta, has been appointed assistant surgeon, with the rank of first lieutenant, in the Governor's Light Artillery, which is officially known as the Second Field Battery, N.G.,Ga.

ILLINOIS.

Diphtheria.—Kewanee reports a number of cases of diphtheria with two deaths, and many cases of so-called "sore throat."

Itinerant Vendors.—The State Board of Health has officially warned all municipalities to refrain from issuing licenses to itinerant vendors of drugs, who do not hold licenses issued by the board, according to the provision of the statutes.

Personal.—Dr. Charles E. Crawford, Rockford, has been re-elected physician of Winnebago County.——Dr. A. D. Winsor has been appointed resident physician of the Maplewood Sanatorium, Jacksonville, vice Dr. Albert H. Dollear, resigned.

Treatment for Consumptives.—The Ottawa tent colony has decided to build a new infirmary 150 feet long by 20 feet wide. ——In the quarterly bulletin of the State Board of Charities the exceptionally beneficial results of the tent colonies at the various state insane hospitals for consumptive patients are given in detail. The tent colony at the Illinois Hospital for the Incurable Insane, Bartonville, shows a per capita cost of only $50 per year.

Chicago.

Cocain Users Fined.—Two negroes charged with using cocain were each fined $10 and costs September 20. Four other men arrested at the same time and place were discharged.

Addition to Hospital.—The Washington Park Hospital Association have the plans prepared for a three-story addition to the institution, to be erected on a lot 50 feet by 150 feet adjoining the hospital.

Trust Deed Given.—The Post Graduate Medical School, through its president, Dr. W. Franklin Coleman, has given a trust deed on its buildings and grounds to secure a loan of $24,000 for five years at 5½ per cent.

Maternity Hospital Planned.—The free maternity department of the American Daughters of the Revolution has made plans for a maternity hospital for the North Side, to be located near Lincoln Park, and to have accommodations for about 15 patients.

Personal.—Dr. and Mrs. Henry P. Newman leave October 1 for San Diego, Cal., for the winter.——Dr. and Mrs. Frederick Tice have returned from abroad.——Dr. William Ewart, London, who has been visiting Chicago, has started for Boston on his way home.

Increase in Typhoid Fever.—The health department has noticed a serious increase in typhoid fever, due, it is believed, to milk, contaminated by polluted water used in washing the cans and other receptacles. The department has closed one infected milk depot and has excluded the milk from two dairy farms, pending examination.

Deaths of the Week.—During the week ended September 22, 582 deaths were reported, equivalent to an annual death rate of 14.81 per 1,000. During the corresponding week of 1905 512 deaths were reported. Acute intestinal diseases caused 122 deaths; consumption, 78; Bright's disease, 44; violence, including suicide, 39; heart disease, 36; pneumonia, 35, and cancer, 25.

Physicians Play Golf.—At the annual tournament of the Chicago Physicians' Golf Association Dr. Charles W. Heywood, Riverside, defeated Dr. William E. Code for the championship; in the second flight finals Dr. William H. Wilder was victorious; Dr. J. C. Hollister won the third flight honors, and Dr. William A. Pusey the honors in the fifth set. At the annual election Dr. John Ridlon was chosen president.

INDIANA.

Urges Detention Hospital.—Dr. Everett E. Hodgin, police surgeon of Indianapolis, urges the city to take steps toward the establishment of a detention hospital for the care of insane patients, as at present there are few facilities for the care of the mentally deranged.

Hospital Opens.—The new hospital of the State College of Physicians and Surgeons, Indianapolis, affiliated with the State University of Indiana, was opened September 15, when 15 patients were removed from Camp Benjamin Harrison to the institution. At the formal opening the attorney-general, the mayor and the president of the university were among those who made addresses.

Births and Deaths of the Year.—The report of the births and deaths in the state in 1905, recently published by the State Board of Health, show that 44,114 births occurred, or 16.65 per 1,000. The largest number of births occurred during July and the smallest number in December. Plural births numbered 184. During the year 36,502 deaths occurred, equivalent to an annual death rate of 13.78 per 1,000. Of the deaths, 19,064 were males and 17,438 were females; 35,096 were white and 1,406 were colored. An interesting feature of the report is that 385 of the decedents were more than 90 years of age.

Typhoid Fever.—Dr. F. Sheldon Hunter, Bedford, secretary of the Lawrence County board of health, has investigated the typhoid-fever situation in Mitchell. He obtained samples from the three public wells, each of which was found to contain typhoid germs. It was reported that Mitchell had 74 cases of typhoid fever, but Dr. Hunter says that only 21 cases have been reported to him.——Reports of a typhoid-fever epidemic near Van Buren have been greatly overdrawn, according to the county health officer, who says that only 3 cases have been reported. Seven cases of fever reported to him a few days before were not typhoid, but malaria.

August Diseases and Deaths.—There was a lower mortality and less sickness in August, 1906, than in the corresponding month of 1905, according to the report of the State Board of Health. Diarrheal diseases were most prevalent. The order of prevalence was as follows: Diarrhea, cholera morbus, typhoid fever, cholera infantum, rheumatism, tonsillitis, dysentery, intermittent and remittent fever, bronchitis, inflammation of the bowels, scarlet fever, "typho-malarial" fever, influenza, diphtheria, pleurisy, pneumonia, whooping-cough, erysipelas, cerebrospinal meningitis, measles, puerperal fever and smallpox. During the month 3,000 deaths were reported, as compared with 3,073 in August, 1905, indicating respectively annual death rates per 1,000 of 13.3 and 13.6. Of the total deaths, 641, or 22.6 per cent., were of infants under one year and 691 of persons over 65 years. Tuberculosis caused 351 deaths. There were 32 fewer deaths from typhoid fever than in August, 1905. Smallpox was prevalent in mild form in four counties, 46 cases being reported. Violence caused 192 deaths, 7 of which were homicides and 22 suicides; of the latter, 6 were from gunshot wounds and 12 from poisoning. Of the accidental deaths, 46 were caused by railway and trolley car accidents, 25 by drowning, 9 by lightning and electricity, 29 by falls and crushing injuries, 9 by burns and scalds and 5 by sunstroke.

IOWA.

Typhoid Fever.—An epidemic of typhoid fever is reported at Storm Lake.——The health officers of Fort Dodge and Ames sound emphatic notes of warning to the residents of these cities regarding typhoid fever, warning them to have their drinking water analyzed, and advising as a routine measure that all drinking water be boiled.

Personal.—Dr. William B. La Force, Ottumwa, has been elected professor of gynecology and abdominal surgery in the Keokuk Medical College, College of Physicians and Surgeons, and has moved to Keokuk.——Dr. Thomas Farquhar, Early, has moved to Spokane, Wash.——Dr. Harold Bailey, Waterloo, has returned after six months in the London hospitals.——Dr. and Mrs. Albert H. Blocklinger, Dubuque, have returned after two years in Europe.

KANSAS.

Physicians Use Automobiles.—Out of the 82 licenses issued for automobiles in Topeka up to September 21, 14 were issued to physicians.

Typhoid Fever at Fort Riley.—It is reported that typhoid fever is prevalent at Fort Riley, and that as the chief medical officer of the camp deems its presence a menace to the health of other organizations, Company H, Thirtieth United States Infantry, in which 4 cases have occurred, has left for Fort Reno, Okla.

To Test River Water.—The secretary of the State Board of Health has signed contracts with the officers of the United States Geological Survey for an examination of the Kansas streams, looking after the solution of the problems of water supply, pollution and sanitation. The government will spend $1,500 and the state an equal amount in making this survey.

College Opens.—The Medical Department of Washburn University, Topeka, opened for the year September 4. Five faculty changes are announced: Dr. John B. Town has been appointed lecturer on embryology; Dr. F. J. Mahon Ernest, instructor in pathology; Dr. Charles B. Van Horn, lecturer on anatomy; Dr. Robert B. Stewart, instructor in clinical medicine, and Dr. Elizabeth Ernest, superintendent of the dispensary.

To Check Consumption.—Dr. S. Jay Crumbine, Topeka, secretary of the State Board of Health, has prepared for general distribution, a pamphlet on the subject of tuberculosis, whose object is to stop the spread of the disease, and warn the people of the dangers arising from it. The pamphlet contains these rules to be followed by state and county officers and employés in the state:

All persons in state and county employ are positively forbidden to spit on the floors.

Rooms, hallways, corridors and lavatories shall be freely aired and effectually cleaned at least once a day, and not during working hours.

Spittoons shall receive a daily cleansing with very hot water, and when placed ready for use must contain a small quantity of water.

Dust must be removed as completely as possible by means of dampened cloths or mops. It should never be needlessly stirred up by a broom or duster, as this practice only spreads the dust and germs.

Floors of tiling, brick or stone must be frequently scoured with soap and water.

The senior clerks in charge of workrooms will take measures to secure during working hours the admission of as much fresh air and sunshine as the conditions will permit.

The use of individual drinking glasses is recommended.

Persons in state employ who suffer from pulmonary tuberculosis should be separated, when possible, from others while at work.

Home advice for consumptives:

Sleep alone.

Use no hangings, upholstered furniture or useless floor coverings in your sleeping room.

Whitewashed or painted walls are preferable to those covered with wall paper.

Expose the bedroom freely to the outside air when not occupied, and sleep with the windows open. Spend as much time as possible in the open air, and use the bedroom only at night.

Do not be afraid of cold weather as long as the body is protected, and be especially careful to keep the feet dry.

Keep the body warmly clad and guard against sudden changes in the weather.

Take plenty of nourishing food. Consumptives often need more nutriment than they are inclined to take. Milk, eggs and fatty foods are especially valuable, when they can be assimilated.

There is no known medicine that can cure consumption. Medicines for the relief of cough and other symptoms of the disease should be taken only on the advice of a physician.

MARYLAND.

Typhoid Fever.—Burkettville, six miles south of Middletown, with a population of less than 800, reports 16 cases of typhoid fever, with one death.

English Surgeon in Annapolis.—Staff Surgeon Alexander Gaskill, Royal Navy, who is in America studying naval hospital methods, visited the U. S. Naval Academy, Annapolis, September 20, and inspected the government hospital in process of construction.

Physician Injured.—Dr. Claiborne H. Mannar, Rockville, was seriously injured in a runaway accident near Halpine, August 23. He was kicked by his horse, breaking his jaw and causing severe cuts and contusions of the face. He was taken to a hospital in Washington and is reported to be improving.

Baltimore.

Typhoid Fever.—During the week ended September 15, 63 cases of typhoid fever were reported, and during the week ended September 22, 51 cases.

College Opens.—The Baltimore Medical College opened for its 1906-07 session September 21 with an address by Dr. David Street on "The History of Medicine."

Personal.—Dr. Thomas Shearer is in London.——Dr. William Green has returned from a prolonged trip to northern health resorts.——Drs. Randolph Winslow and J. Mason Hundley returned from Europe September 16.——Dr. Harry Adler has been unanimously elected president of the Hebrew Hospital and Asylum.——Dr. Roland B. Whitridge sailed from Genoa on his return from Europe, September 20.——Dr. Howard A. Kelly sailed from New York for Europe, September 12.

Hospital News.—An appropriation for $25,000 has been allowed for the erection of a hospital for infectious diseases, adjoining Bay View.——Johns Hopkins Hospital is considering the erection of a new building for the children's ward, to be three stories high, 204 feet frontage, with two wings, and to cost about $250,000.——Dr. Frank G. Moyer has obtained a permit to erect a four-story brick sanatorium at 1500 Eutaw Place.——The St. Agnes Hospital announces the following appointments on its staff: Dr. Joseph C. Bloodgood and Alexius McGlannan, surgeons, and Dr. Guy L. Hunner, gynecologist.

MASSACHUSETTS.

Harvard Dedication.—The new buildings of the Harvard Medical School, Boston, described in THE JOURNAL, July 7, page 50, were dedicated September 25 and 26. The program of exercises included addresses by President Eliot, Dean Richardson, Professors J. Collins Warren, Thomas Dwight and Frederick C. Shattuck, and Mr. Charles A. Coolidge, representing the architects. The exercises were followed by demonstrations in the different laboratories. On September 26 at 11 a. m. an academic session was held at the University of Cambridge with an oration by Prof. William H. Welch of Johns Hopkins University. Honorary degrees were conferred on several notable members of the profession. Many distinguished guests from American and foreign universities and scientific bodies were present. The officers of the alumni association gave an informal reception on Tuesday evening to the alumni and guests, and on Wednesday at 1:30 p. m. the triennial dinner was held in Memorial Hall at Cambridge. Speeches were by President Eliot, Governor Guild, members of the faculty of medicine, as well as by several invited guests. A further account will appear next week.

MICHIGAN.

College Opens.—The Grand Rapids Medical College opened for the school year September 17.

Hospital Founded.—By the will of the late James L. Hurley, Flint, about $40,000 will be available to establish a hospital in Flint, to be named in his honor.

Typhoid Epidemic.—The secretary of the State Board of Health is conducting an investigation as to the cause of the recent epidemic of typhoid fever in Traverse City, where 150 cases of the disease are said to have occurred.——An epidemic of typhoid fever is reported by the health officer of Menominee.

Wayne County Society.—At the annual meeting of the Wayne County Medical Society, the following officers were elected and installed: President, Dr. J. Henry Carstens; vice-president, Dr. William F. Metcalf; secretary and treasurer, Walter D. Ford, and directors, Drs. Frank B. Tibbals, Guy L. Kiefer, H. Wellington Yates, George W. Wagner and Louis J. Hirschmann.

Personal.—Dr. David J. Hale, Fairplain, has returned from Panama.——Dr. Fannie Draper, Jackson, sails for China October 11.——Dr. Robert L. Kennedy, Detroit, has been appointed superintendent of the State Tuberculosis Sanatorium, to assume charge December 1.——Dr. James D. Kennedy and Dr. William H. Price, Detroit, sailed from New York for Europe, August 24.

Ill and Injured.—Dr. Joseph Poposkey, Grand Rapids, sustained a fracture of the left ankle in a runaway accident September 10.——Dr. LeRoy Lewis, Bay City, is at the Lewis Hospital, suffering from a fracture of the arm due to a fall.——Dr. James C. Abrams, Calumet, has been confined to his house for two weeks with congestion of the brain.——Dr. A. Curtiss, Big Rapids, was struck by a truck on a station platform at Clear Water, Minn., and sustained a fractured rib.

MISSOURI.

Funds Needed to Complete Hospital.—Of the $225,000 of bonds voted for the erection of a new city hospital building in Kansas City, it is reported that less than $20,000 remain, and it is anticipated that $100,000 more will be required before the institution can be made habitable.

Temporary Restraining Order Served.—Dr. Christian H. Eyermann, St. Louis, threatened by the State Board of Health with revocation of his license, because of advertising to cure appendicitis by electricity, has obtained a temporary restraining order against the board, denying to that body the right to revoke Dr. Eyermann's license as a physician and surgeon.

NEW YORK.

Physicians Try to Aid Patrick.—A petition signed by 3,500 physicians of New York State has been presented to the governor asking that a commission of experts be appointed for the purpose of settling the disputed medical point in the Patrick case. Patrick was sentenced to die for the murder of William M. Rice of New York City, and the case is now on appeal before the United States Supreme Court. The point raised, on which the expert testimony was so conflicting, was whether the congestion of the lungs might not have been the result of the embalming fluid and not of the chloroform, which it was alleged had been administered under the direction of Patrick.

New York City.

Personal.—Dr. Henry P. Loomis arrived from Europe on the *Baltic* September 20.——Dr. and Mrs. Edward L. Keyes, Jr., sailed for Europe on the *Nieuw Amsterdam* September 19.

Death from Typhus.—Because of the death of a child from typhus fever in the steerage, the *Cretic* was held at quarantine and all passengers were subjected to a rigid examination; the first and second cabin passengers were allowed to land, but the steerage passengers were detained.

Change at St. Gregory's Hospital.—It has been announced by Ballington Booth that the Volunteers of America and St. Gregory's Society have effected a union in the management of St. Gregory's Hospital in Gold Street. The building has been remodeled and equipped during the past year at a cost of $10,000.

Less Typhoid in Brooklyn.—It is announced by the Board of Health that while there were 689 cases of typhoid reported up to the present time last year, there have been only 173 cases reported thus far the present season. This is attributed to the effect of the advice of the department to boil all drinking water.

Amend Sanitary Code.—At the meeting of the Board of Health September 19, important amendments to the sanitary code were adopted in compliance with the new pure-food law. One of the amended provisions of the code is that no person shall have, sell or offer for sale any food which is adulterated or misbranded, and the term food is defined to include every article of food and every beverage used by man, and all confectionery. The code defines adulterations very minutely.

Contagious Diseases.—There were reported to the sanitary bureau for the week ending September 15, 351 cases of pulmonary tuberculosis, with 150 deaths; 184 cases of diphtheria, with 19 deaths; 134 cases of typhoid fever, with 18 deaths; 74 cases of scarlet fever, with 4 deaths; 53 cases of measles, with 2 deaths; 38 cases of whooping cough, with 7 deaths; 14 cases of cerebrospinal meningitis, with 5 deaths; 2 cases of smallpox and 6 of varicella, a total of 856 cases and 205 deaths.

The Trachoma Problem.—It is asserted by Dr. John C. Lester assistant surgeon of the New York Eye and Ear Infirmary, that the cases of trachoma in the public schools are so numerous that the hospitals are utterly unable to cope with them. This is attributed to the filthy conditions of the tenement-house regions, especially on the East Side, one-third of the school children there being afflicted with trachoma. It is stated that one-quarter of the school children of Brooklyn are affected. The Board of Health is coping with the situation as best it can, but the situation is said to be serious unless more hospitals are established.

NORTH CAROLINA.

Personal.—Dr. P. L. Murphy has been re-elected superintendent of the State Hospital at Morganton.——Dr. Andrew J. Crowell has returned to Charlotte after a three months' stay abroad.——Dr. H. J. Williams, Jr., Winston, has gone to Edinburgh for a year's study. He expects to locate eventually in Cape Town, South Africa.

Vital Statistics.—During July 278 deaths were reported, equivalent to an annual death rate of 18.3 per 1,000. Diarrheal diseases and typhoid fever led in the death causes. During the month measles were reported from 11 counties; whooping-cough from 30 counties; scarlet fever from 4 counties; diphtheria from 10 counties; typhoid fever from 64 counties; malarial fever from 17 counties; cerebrospinal meningitis from 6 counties; peritonitis from 2 counties; pneumonia from 7 counties, and smallpox from 13 counties.

College Sessions Begin.—The annual session of the North Carolina Medical College, Charlotte, opened September 8, with an unusually large enrolment. The additions to the faculty include Dr. Edward C. Register, professor of practice of medicine, and Dr. George W. Pressly, professor of the principles of surgery. The work on the new building is progressing rapidly. ——The fifth annual session of the Medical Department of the University of North Carolina, Raleigh, opened September 14 with an address on "The Value of Character to the Professional Man," by Dr. Augustus W. Knox, professor of surgery.

OHIO.

Diphtheria.—Carlton is reported to have 125 cases of diphtheria and the churches and schools have been closed.——The school at Story and Fairview school, east of Piqua, have been closed on account of diphtheria.

Violated Medical Law.—Mrs. Lida Hazlitt, Richmond, Ind., was arraigned at Springfield, Ohio, for practicing medicine without a certificate, was found guilty of violation of the state medical law, and was fined $30 and costs, which was paid.

Section on Pathology.—Dr. Otto V. Hoffman, Dayton, advocates the inauguration of a special section in the Ohio State Medical Association for the study of pathology, along lines similar to those of the pathologic exhibits, held at the annual meetings of the national association and several of the state medical societies.

Typhoid.—Cincinnati reports 40 cases of typhoid fever for the week ended September 14.—The Columbus Board of Health has instructed the health officer, Dr. McKendrie C. Smith, to enforce the state law against physicians who do not report the cases of typhoid fever in their care. The law provides a fine of not less than $100 for the first offense.

Personal.—Dr. Martin Stamm, Fremont, left August 20 for a tour of the world. A banquet was tendered him by the medical profession of the city August 17.——Dr. Mark Milliken, health officer of Hamilton, has returned from a trip to Colorado.——Dr. Charles W. Baker has resigned as a member of the East Liverpool Board of Health.——Dr. Myron J. Ewing and family, Findlay, left for their new home in Oregon September 8.

Endowment for Library.—By the will of the late James Patterson Walker, surgeon-general, Bengal service, his library collected during a long term of service in India and other parts of the world, has been bequeathed to the Lloyd Library of Cincinnati, together with an endowment of $30,000 in cash to be devoted to the encouragement of original research in the practice of medicine and pharmacy, with special reference to the specific action of medicines.

Medical College Opens.—The fifteenth annual session of the Ohio Medical University, Columbus, was opened September 11. Introductory remarks were made by the chancellor, Dr. James U. Barnhill, Columbus, and addresses were made on behalf of the trustees and the faculty. The faculty changes were as follows: Dr. Henry A. Rodebaugh, instructor in nervous diseases; Dr. Albertus C. Wolfe, formerly professor of diseases of the nose and throat, professor of therapeutics; Dr. C. E. Pfeifer, instructor in dietetics; Dr. P. M. Wright, instructor in therapeutics; Dr. Harry M. Snively, assistant to the chair of physiology, and Dr. Howard M. Brundage, assistant to the chair of anatomy.

PENNSYLVANIA.

Fire Loss.—The house of Dr. John W. Groff, Harleysville, was struck by lightning and destroyed, September 13. The loss was about $5,000.

Will Equip Hospital Room.—Dr. Will L. Shindel, Sunbury, has advised the building committee of the Sunbury Hospital that he will equip and furnish a private room in memory of his father, the late Dr. Daniel W. Shindel.

Typhoid Fever.—Nanticoke, which suffered from an epidemic of typhoid fever last year, reported on September 11, 16 cases with two deaths.——During the five days ended September 14 89 cases of typhoid fever were reported to the bureau of health of Pittsburg.

Ill and Injured.—Dr. Charles D. Hunt, Williamsport, was rendered unconscious by being thrown from his carriage, September 15.——Dr. Simon P. Earnest, Belmont, who was recently operated on at the West Penn Hospital, Pittsburg, is making satisfactory progress toward recovery.

Personal.—Dr. Andrew B. Gloninger, Lebanon, sailed for Antwerp, September 10.——Dr. Herbert Fox has been appointed supervisor of the state laboratory by State Health Officer Dixon.——Dr. Sydney J. Repplier, Reading, who has been appointed physician to the United States minister to Morocco and Algeria, left August 29 for Algiers and Fez.

Vaccination Not Compulsory.—The attorney-general declared September 12 that parents can not be compelled to have their children vaccinated. A teacher is compelled to refuse to admit unvaccinated children to the public schools, or those who have not presented a certificate of successful vaccination or of having had smallpox. When children have been refused admission to schools under these circumstances and have been sent home, parents can not be fined for having their children out of school.

Philadelphia.

Bequests.—By the will of the late Mary A. Fry, the Home for Consumptives will receive $2,000.——A bequest of $500 was made to the Wills Eye Hospital by the late Annie E. Hamilton.

Personal.—Dr. Ross B. Patterson has been appointed subdean of Jefferson Medical College.——Dr. Thomas F. Neil has been appointed superintendent of the Blair County Hospital for the Insane.——Dr. John H. Trinder has been appointed resident physician of Girard College.

Health Report.—The total number of deaths reported for the week ended September 15 aggregated 500. This is an increase of 101 over the number reported in the corresponding period of last year, and an increase of 11 over the number reported last week. The principal causes of death were: Typhoid fever, 16; pertussis, 11; consumption, 62; cancer, 23; alcoholism, 6; apoplexy, 20; heart disease, 34; acute respiratory disease, 36; enteritis, 57; hepatic cirrhosis, 5; appendicitis, 4; Bright's disease, 40; congenital debility, 10; suicide, 4; accidents, 16, and marasmus, 16. There were 162 cases of contagious disease reported, with 20 deaths, as compared with 176 cases and 20 deaths reported in the previous week.

GENERAL.

Personal.—Brigadier General Robert M. O'Reilly, who has been surgeon general of the Army for the past four years, was reappointed to that office by direction of the President of the United States.

Health Conditions of Cuba.—Passed Assistant Surgeon von Ezdorf reports that for the week ending September 11, 5 cases of suspected yellow fever and 9 cases of dengue were reported in Havana. He states that he has been informed that the conduct of sanitary work, particularly in eradicating yellow fever, will not be discontinued, although the country is engaged in suppressing a revolution.

Pennsylvania Surgeons Meet.—The Association of Surgeons of the Pennsylvania Lines held its twenty-fifth annual meeting in Pittsburg, September 13. The following officers were elected: Dr. Richard J. Morgan, Van Wert, Ohio, president; Dr. Adam M. Beers, Newcomerstown, Ohio, vice-president; Dr. Stewart L. McCurdy, Pittsburg, secretary and treasurer, and Drs. A. I. Bouffleur, Chicago, and James G. Carr, Coshocton, Ohio, members of the executive committee.

American Surgeon in Danger.—Assistant Surgeon Walter Robertson of the United States Public Health and Marine-Hospital Service, stationed at La Ceiba, Honduras, was, according to newspaper reports, threatened with assassination as the result of reporting a case of yellow fever. For over a week he dared not leave the consulate, and during that time fifty Americans guarded the consulate to prevent an attack by the natives.

Homeopaths Elect Officers.—At the annual session of the American Institute of Homeopathy, in Atlantic City, September 13, the following officers were elected: President, Dr. E. B. Hooker, Hartford, Conn.; vice-presidents, Drs. James W. Ward, San Francisco, and W. E. Reilly, Fulton, Mo.; secretary, Dr. Frank Kraft, Cleveland; treasurer, Dr. T. Franklin Smith, New York; registrar, Dr. J. H. Bald, Bay City, Mich.; necrologist, Dr. C. B. Kinyon, Ann Arbor, Mich.; member of the board of censors, Dr. G. H. Quay, Cleveland.

Missouri Valley Meeting.—The Medical Society of the Missouri Valley held its nineteenth annual meeting in Council Bluffs, Iowa, September 6 and 7. About 100 physicians were present. It was decided to hold the next session in Omaha, in March, 1907. The following officers were elected: Dr. O. Beverly Campbell, St. Joseph, Mo., president; Drs. William F. Milroy, Omaha, and C. O. Thienhaus, Milwaukee, vice-presidents; Dr. Charles Wood Fassett, St. Joseph, Mo., secretary (re-elected), and Dr. Donald Macrae, Council Bluffs, Iowa, treasurer (re-elected).

To Purify State Streams.—The representatives of the state health and sanitary engineering departments of New Jersey, Pennsylvania and New York held a joint meeting in Atlantic City, September 14, and adopted plans for the three states by united action to stop the pollution of the Delaware River. New Jersey has been at work five years on this project and has already accomplished much on the upper waters by compelling cities and towns to install modern sewerage disposal plants. Pennsylvania and New York have started on the same course, but the three states agreed that by working together the desired object can be more easily obtained. Those at the conference were: Col. Charles W. Fuller, chairman of the sewerage commission of New Jersey; Dr. Samuel G. Dixon, state health commissioner of Pennsylvania; Herbert Snow, chief sanitary engineer, Department of Health, Pennsylvania; Harry M. Herbert, engineer of New Jersey commission; Theodore Horton, engineer, New York Department of Health; A. H. Seymour, secretary, New York Commission of Health, and Wilbur Morse, secretary, Pennsylvania Commission of Health.

Cholera in the Philippines.—A particularly disquieting feature of the situation in the provinces, according to *Public Health Reports*, is that cholera has traveled overland over the new road which has recently been opened from the province of Laguna to the sea. The disease made its appearance almost simultaneously at the ports of Pagbilao and Lucena, in the province of Tayabas. Owing to the fact that it is impossible to give that careful attention to outgoing vessels leaving these ports which is given to vessels leaving Manila, it is feared that the disease may be carried by small sailing vessels to nearby islands, from which it may again spread throughout the Philippine Archipelago, as was the case in 1902. The bureau of health has taken vigorous measures to combat the outbreak at the ports of Tayabas province. While the disease has not been entirely stamped out in the ports, yet there has been a reduction in the number of cases and no spread to other ports. The impression is that if the disease can be confined to the same territory which it has occupied during the past year, which section is embraced within an area of 75 miles from Manila, the chances of entirely eradicating it during the next dry season are very good; but if the disease should now gain another foothold in the southern islands it would probably be several years before it could be successfully eradicated.

CANADA.

Typhoid Fever in Montreal.—A total of 63 cases of contagious diseases was reported in Montreal during the week ended September 8. Thirty of these were typhoid fever; 15 were tuberculosis.

Personal.—Dr. R. D. Sanson, Calgary, Alberta, is visiting in Toronto.——Dr. W. D. Ferris, Edmonton, Alberta, has been visiting in Vancouver.——Dr. R. H. Craig and Dr. Austin Irvine, Montreal, have returned home from a trip to Toronto, New York and Atlantic City.——Dr. R. A. Pyne, minister of education for Ontario, has returned from a three months' trip to the old country.——Drs. McMurtry, McDonald and Scott, Montreal, are leaving for China as medical missionaries. Dr. McDonald, who has been in the field before, works specially in Canton, whence come most of the Chinese in Montreal.

Tuberculosis Sanatorium for British Columbia.—The Rev. Dr. Moore of Ottawa, secretary of the Canadian Association for the Prevention of Consumption, has been in British Columbia in the interests of his association. At a public meeting, September 7, Dr. Underhill, the health officer of Vancouver, and Dr. C. J. Fagan, Victoria, the health officers of the province, and Dr. Moore made addresses. Dr. Fagan said that the lieutenant-governor, Mr. Dunsmuir, had contributed $10,000 for a sanatorium for the province; that the provincial government had given $5,000; the Canadian Pacific Railway, $5,000, and numerous private individuals, $2,500. It is desired to raise $50,000 before the work is proceeded with.

Proposed Department of Public Health in Ontario.—About a year ago, in a paper read before the annual meeting of the Ontario Medical Association, Dr. Charles A. Hodgetts, secretary of the Ontario Board of Health, advocated the creation of a separate department of public health under a responsible minister. The matter was fully discussed at a meeting of the Ontario cabinet recently. If such step is taken it is likely that the Hon. Dr. Willoughby, a minister now without portfolio, will be placed at the head of the department, and the present secretary, Dr. Hodgetts, made deputy minister. As the board of health is to be reorganized, it is altogether likely that it will take shape in the direction above indicated.

FOREIGN.

Nostrum Regulations in Australia.—The regulations of the Victoria (Australia) board of health with regard to the labeling of secret remedies containing poisons will go into effect Jan. 1, 1907, instead of October, 1906, in order to give British and American manufacturers time to comply with the new requirements.

Central Office for Research on the Brain.—It is announced that the Senckenburg Neurologic Institute at Frankfurt a. M., Germany, has been appointed the headquarters for international research on the brain. The committee making the appointment is an offshoot of the International Association of Academies of Science.

Prizes for Nursing Mothers.—The city of Leipsic, Germany, has decided to give money prizes to women who nurse their infants. Prizes are also to be given to midwives who distinguish themselves by aiding and persuading women to nurse their children. The prizes are supposed to take the place of any loss of earning capacity because of nursing.

Pawlow to Lecture in London.—The sixth Huxley lecture will be delivered October 1 at London by Prof. I. P. Pawlow, professor of physiology at St. Petersburg. His subject is to be "Recent Advances in Science and Their Bearing on Medicine and Surgery." It will be remembered that he received one of the Nobel prizes in 1904, for his classic discoveries in the physiology of digestion.

Plague in Turkey.—Consul Jewett writes from Trebizond that 4 cases of plague, with 1 fatal, were reported in the prison at that place, August 8. Eight cases and 3 deaths were officially reported up to and including August 18. The prison is situated near the other government buildings in the center of the city. It contains 700 prisoners crowded together in seven rooms that give not more than 10 square feet of floor space for each inmate. The sanitary condition of the prison is of the worst type. As the local authorities were dilatory, the consuls of the nine powers represented at Trebizond held a meeting and requested the governor-general to adopt vigorous measures to protect foreigners and commerce.

Effect of Plague and Malaria on the Birth Rate in India.—The sanitary authorities in the Punjab state that the influence of plague on the birth rate is of an indirect and general nature only; and that in spite of the fact that there were 334,897 deaths from plague in 1905, the birth rate in the Punjab rose from 41.5 to 44.4 per thousand of the population. The *Journal of Tropical Medicine* states that it is quite noticeable that more women than men die of plague in the Punjab, a fact probably owing to women being secluded indoors and therefore more in contact with the sources of infection. The birth rate would seem to be lessened more markedly by the prevalence of malaria than of plague. A severe malarial outbreak in the autumn is reported to affect the birth rate in the following year more than any other form of disease. For four years in succession the death rate in the Punjab has been higher than the birth rate; and the Punjab has recently had the highest death rate of any district of India, amounting to no less than 47.55 per thousand.

Syphilis in Turkey.—The Constantinople correspondent of the *Lancet* states that the spread of syphilis and venereal diseases is reported from several parts of Sivas. The sanitary inspector of the province has asked the central authorities of Constantinople promptly to adopt all the necessary measures in order to check the propagation of the malady and to treat the sufferers. It is intended to build in Sivas itself a hospital with 50 beds for syphilitic and venereal patients. Two medical men will be appointed with a salary of $60 a month. Their duty will be to visit all the contaminated localities and to render gratuitous assistance to all seeking such. They will also receive a proportionate sum for traveling expenses and for drugs and instruments. Similar measures have been adopted in other provinces.

The Antiquackery Campaign.—The efforts of those interested in the antiquackery movement in Germany have already borne fruit, as can be seen by the various numbers of the organ of the Antiquackery Society, *Hygienische Blätter*. The last number relates that a "nature healer" has recently been sentenced by the Elberfeld court under the following circumstances: He had prescribed homeopathic pills and warm baths to a woman with uterine cancer who had been urgently advised by her physician to have the growth removed at once. After the death of the woman the nature healer was condemned by the court to nine months' imprisonment. Another sign of progress is shown in the action of the Frankfurt "*Kleine Presse*," a lay paper, which received an advertisement for insertion accompanied by a considerable sum of money, setting forth the virtues of "coza powder," a cure for inebriety sent out by the "Coza Institute" in London. The advertisement stated that free samples would be sent on demand. The paper sent for a free sample under another address; with the sample came two boxes of the powder, C. O. D., for $5. The boxes were returned by the consignee, but by return mail one box was sent him with the statement, "one box alone is sufficient to cure in many cases," price $2.50. The paper returned the advertisement and the accompanying money, declining to do business with the Coza Institute, but writing up the affair in detail for its news columns, with appropriate comment.

LONDON LETTER.

(From Our Regular Correspondent.)

Infantile Mortality and Health Visitors.

The value of women as health visitors has been proved by an experiment at Limehouse, one of the poorest districts of the East End of London, where the infantile mortality stood at an alarming height. For some time the proposal to appoint health visitors was under consideration, but the borough council would not incur the expense. The need for a health visitor was so great, because of the ignorance among mothers as to the rearing of babies, that a private individual agreed to pay the salary of such an officer for two years. Her duty was to visit the homes of the mothers and give instructions as to the proper feeding of infants. At first she was looked on with suspicion, which she conquered by tact and ability. Reporting on her work the health officer says: "She visited and revisited the homes of 721 infants, 74 of whom died under the age of one year. The rate of mortality among the infants she visited was, therefore, 102 per 1,000 births. This is very satisfactory, considering that the area was selected on account of its high mortality and that the infant mortality for the whole district was 185 per 1,000 births." She pointed out the disadvantages of the bottle with the long tube and diminished the extent to which it was used. She also did her best to abolish the use of the dummy teat which, no matter how dirty, was inserted into the child's mouth whenever it cried and the feeding bottle was not at hand.

Mistakes in the Diagnosis of Fevers.

The annual report of the Metropolitan Asylums Board for 1905 contains the usual statement of the mistakes made by doctors in sending cases into the fever hospitals. Of the total admissions 9 per cent. (as compared with 10.7 in 1904) were found not to be suffering from the diseases mentioned on the medical certificates on which they were removed to hospital. There were 975 cases wrongly certified as scarlet fever. Of these, 96 were measles, 90 rubella, 106 tonsillitis, 147 erythema, 143 had no obvious disease and 149 were not diagnosed. There were 908 cases wrongly certified as diphtheria. Of these, 52 were measles, 544 tonsillitis, 55 had no obvious disease and 22 were not diagnosed. There were 247 cases wrongly certified as typhoid fever. Of these, 27 were influenza, 6 general tuberculosis, 64 pneumonia and 6 had no obvious disease. In the case of smallpox the mistakes formed a high proportion: 32 out of 74 admissions. The explanation is obvious. In recent years smallpox has become so rare that many doctors have never had an opportunity of seeing a case.

Lunacy in Ireland.

The special report of the inspectors in lunacy as to the large increase of lunacy in Ireland has been issued. The following conclusions have been arrived at: 1. The population of the country has decreased, but, while the number of insane has increased, the statistics do not offer precise grounds to put forward a definite opinion. 2. Without affirming that there has been no increase the inspectors conclude that the increased number is largely due to accumulation in public asylums. 3. The increase has occurred among the poor. 4. The increased number in asylums is due to accumulation and decreased discharges and deaths, to widening of medical opinion as to insane persons who should be confined, to the greater confidence in asylum treatment and the increase in the number and accessibility of asylums, to the great longevity owing to improved sanitations, and to the influx of returned emigrants broken down mentally. 5. The statistics of insanity in other countries, more, even, than those in Ireland, point to the fact that, notwithstanding their undoubted intellectual gifts the Celtic race is prone to mental disease. 6. Next to heredity intemperance heads the list of causes of insanity. General paralysis of the insane is on the increase, though in the rural districts it is practically absent.

The Use of Diachylon as an Abortifacient.

The use of lead as an abortifacient is a practice which was unknown in this country until 1893, when it was first described by Dr. Pope of Leicester, who reported two fatal cases. Subsequently other cases were published, principally in the Midlands. In 1901 the process extended to Sheffield, where it became very prevalent. The lead was taken in the form of diachylon plaster or in patent "female pills." In and around Nottingham an increasing use of diachylon as an abortifacient among the working classes has been recently observed. The attention of the city authorities was directed to the subject, and it was found that in cases of abortion pills described as "Mrs. Seagrave's pills" had been taken. Mrs. Seagrave (*alias* Wardle) was found to be doing an extensive trade in the sale of these pills, both to married and to unmarried women. A box of pills was obtained by an agent of the health department and found to contain from 50 to 70 per cent. of diachylon, aloes and an outer coating of boric acid. The pills were roughly made and varied in weight from 1½ to 5 grains. Mrs. Wardle was arrested and a large quantity of pills and implements for making them were found in her house. She was brought before the magistrates and three witnesses were

produced who had bought pills from her, became seriously ill after taking them and aborted. The medical evidence showed that they suffered from lead poisoning. Mrs. Wardle was committed for trial at the assizes, where the women who had purchased the pills stated that she had instructed them to take a dose of Epsom salts, fasting in the morning, then four of the pills, and four of the pills again at night. For the defense it was stated that Mrs. Wardle had no idea that the pills were harmful and that she had sold them not for the purpose of procuring abortion, but only as "female pills" to be taken in cases of irregular and suppressed menstruation. Several witnesses were called, both male and female, who stated that they had taken the pills and derived benefit from them for such ailments as bad backs, internal pains and anemia. To rebut the last statement the health officer was called and stated that anemia was one of the earliest and most constant symptoms of lead poisoning and that lead would aggravate instead of benefiting anemia. The judge in summing up said that it was difficult to reconcile Mrs. Wardle's statement that she was not aware of the harmful effects of diachylon with the fact that she had advised her clients in every instance to take Epsom salts, which were an acknowledged eliminator of lead. She must have known that diachylon contained lead. She was found guilty, but recommended to mercy, and sentenced to eighteen months' hard labor. The judge said that he wished it to be clearly understood that the offense was a felony for which the maximum penalty was penal servitude for life.

VIENNA LETTER.

(From Our Regular Correspondent.)

Union of Medical Representative Clubs in Austria.

An important evolution in the organization of medical practitioners took place a short time ago when at a meeting of the delegates of nearly all the medical clubs a uniform and unanimous basis for work was arrived at. In order to understand the difficulties and obstacles that have prevented hitherto a complete organization of the profession in our dual empire, Austro-Hungary, it must be kept in mind that no fewer than nine different nations and languages are combined to form this one realm. Racial and religious differences were so powerful, even in the capital itself, that the 2,800 doctors of Vienna were not found unanimous in the fight against bureaucratic arrogance two years ago, when the governor dissolved the "Aerztekammer" and ordered a new election of that medical representative body. Matters have improved since, and the organization has proved such an influential agent in attaining minor results that at last all obstacles have been overthrown and now the entire body of the practitioners in Austria, some 12,000 men, are practically brought under one hat. In all matters pertaining to the general condition of medical men, to hospital education, appointments, to ethics and legislative representation the newly formed union will proceed hand in hand with the clubs and accept the ideas proffered by each single rural branch. The first trial of the working order of the union was made in the organization of the strike of the country practitioners of Lower Austria, when the union had to prevent "blacklegging," in which endeavor it had full success. Although the conflict between the country doctors and the state is still raging, not a single case of strikebreaking has been noticed. There are two more points where the union will have to show its power. One is contract practice, which a law promulgated 18 years ago made compulsory for all persons employed in factories and business concerns. Through the absence of even the rudiments of organization at that time, medical influence could not be brought to bear on the proposed bill, and the interests of the doctors were sacrificed to the convenience of the tradesman. The present year has already seen the first conflict between the organization and some clubs. The other point, where a change is urgently wanted, is the condition of the hospital staff, which, in its majority, is unpaid, except the professors and senior assistants. As the "output" of the universities is so large, the numerous M.D.'s turned out yearly are glad to be able to work at a hospital. Thus the state employs the hands and minds of hundreds of young doctors without paying for it. This increases the difficulties, which are already large enough, in the path of the young doctor, who is anxious to find his living by work for which he has been educated. The union will take the matter in its hands and will most likely cause a strike among the juniors until the state finds the money.

A New Children's Hospital.

By a munificent gift from a private individual, a new hospital for children has been erected at a cost of about 600,000 kronen ($120,000). It has been added as a separate pavilion to the existing Franz Joseph Hospital, so as to save the expense of a separate administrative staff, but otherwise it is quite an independent hospital, equipped with all the latest and most modern appliances for scientific work. At present it will accommodate 100 in-patients, but its capacity will shortly be increased to thrice this number. It is meant first for emergency cases, and will be open free of charge to all such

Correspondence

Somnos.

We give space to the following letter so that the H. K. Mulford Company cannot say that we are not treating it fairly, although much of the letter is a repetition of what has been stated before. There is no use in attempting to befog the question:

PHILADELPHIA, Sept. 19, 1906.

To the Editor:—Had your report of the findings on "Somnos" (Elixir Trichlorethidene Propenyl Ether, Mulford) been confined to that product, we might not have felt called on to address this letter of protest, even though prejudice is shown in the treatment of the subject.

You have seen fit, in THE JOURNAL of the American Medical Association, September 15, to attack the integrity of the H. K. Mulford Company and seriously to injure our reputation as a manufacturing house. To this we take strong exception. As your charges are based on what we have said on labels and in advertising circulars concerning "Somnos," we herewith briefly relate the history of its introduction:

Some six years ago two chemists, Dr. Albert C. Barnes, a graduate of the University of Pennsylvania, and Dr. Herman Hille, a graduate of the University of Heidelberg, who were at that time engaged in original research in our scientific department, presented to us a chemical product to which they gave the name chlorethanal alcoholate, as expressing its chemical description, and the symbolic formula $C_9H_{11}O_6Cl_9$, giving its composition. A study was made of its physiologic properties and sufficient clinical data obtained to convince us that we had an important drug which had never before been investigated as a therapeutic agent

Realizing the importance of having these experiments verified by impartial and competent observers, we communicated with the University of Pennsylvania, July 30, 1902, requesting that physiologic experiments be undertaken on this product, and Dr. Colin C. Stewart, then one of the demonstrators in that institution, and now associate professor of physiology at Dartmouth Medical College, undertook the work.

Following are copies of several letters written by us in correspondence with Dr. Stewart at the time:

July 30, 1902.

Dr. C. C. Stewart, University of Pennsylvania, care Physiological Department.

Dear Sir:—Will you kindly advise if you are in a position to take up the investigation of a product (Somnos) which we have, and determine its physiologic action. We are desirous of having our own laboratory tests confirmed.

Will be glad to have you communicate with us at an early date.

February 4, 1903.

Dr. C. C. Stewart, Physiological Department, University of Pennsylvania.

Dear Sir:—We are particularly anxious to have the experiments at some reliable institution or hospital carried out in connection with the physiologic work you are doing—the remedy is one of such importance to the physician that its complete physiologic action should be determined at as early date as possible.

Dr. Stewart's experiments and investigations covered a period of about a year, and fully verified our claims, namely, that Somnos was a hypnotic, differing essentially from chloral in that in medicinal dosage it had no depressing effect on the heart and circulation, amounts equivalent to over 1,000 c.c. (33 fl. oz.) of the elixir (Somnos) for a 150-pound man having been injected intravenously in animals without lethal effect, the lethal dose at that time not being determined. We

were, therefore, amply justified in making the claims which appeared on labels and in our brochure on "Somnos."

In December, 1905, we submitted Somnos to the American Pharmacologic Society, Prof. Reynold Webb Wilcox, president of the association having become interested in the clinical use of Somnos, having used the drug since May, 1904, in the treatment of seventy-two cases. Samuel P. Sadtler, Ph.D., LL.D., professor of chemistry at the Philadelphia College of Pharmacy, chemical editor of the U. S. Dispensatory, one of the committee of revision of the U. S. Pharmacopeia, and one of your Comcil on Pharmacy and Chemistry, was selected by the society to verify the chemical claims for the product. He substantiated the claims of our chemist and found it to be chlorethanal alcoholate, a definite chemical compound, with the symbolic formula $C_9H_{11}O_6Cl_9$, as claimed and devoid of free chloral. This verified our claim that chlorethanal alcoholate is a synthetic compound. Dr. Sadtler, however, suggested that the name "trichlorethidene propenyl ether" be used in place of chlorethanal alcoholate, since the latter was usually used to designate compounds of ethyl alcohol and not polyatomic alcohol.

Up to this time we had expressed the chemical composition of Somnos in technical language, not for the purpose of deceiving the medical profession, as charged by you, but to protect our interests, since the product was not patented.

Professor Sadtler's report, covering four months' investigation, was published in Bulletin No. 1 of the American Pharmacologic Society, and copies sent to you.

After Professor Sadtler's report was published in the bulletin we changed our labels and literature to conform to his suggestions by using the name trichlorethidene propenyl ether in place of chlorethanal alcoholate.

Following are copies of the label used prior to the report and subsequent to it:

EXHIBIT 1.

MULFORD'S SOMNOS,

(Chlorethanal alcoholate) $C_9H_{11}O_6Cl_9$.

Reliable and Safe Hypnotic and Cerebral Sedative.

Indications: In insomnia Somnos is the ideal hypnotic. It is especially valuable in the sleeplessness attendant upon hysteria, "nervousness," neuralgia, typhoid fever, pneumonia, la grippe, alcoholism and mental diseases.

Directions: One to two tablespoonfuls in a half glass of water or milk one or two hours before bedtime, repeated if required. For children, one-half to one teaspoonful, according to age.

H. K. Mulford Co., Chemists, New York, Philadelphia, Chicago.

EXHIBIT 2.

MULFORD'S SOMNOS (word-mark).

(Elixir Trichlorethidene Propenyl Ether)
(Formerly known as Chlorethanal Alcoholate).
Hypnotic, Cerebral Sedative and Antispasmodic.

Dose.—Adults, as a hypnotic, 1 to 2 tablespoonfuls repeated every hour or two, or as required. As a sedative, dessert to tablespoonful in a half glass of water or milk. Children ¼ to 1 teaspoonful, according to age.

H. K. Mulford Co., Chemists, New York, Philadelphia, Chicago.

Prof. Colin C. Stewart was engaged by the society for the physiologic investigation. His report, published in the bulletin, shows that the elixir (Somnos), is not depressant, even when given in six times the prescribed hypnotic dose; that the lethal dose, judging from its effect on dogs, is not less than 16½ fluid ounces. This report verified his previous investigations, made at the University of Pennsylvania in 1902 and 1903.

Professor Stewart's earlier work was published, but by his request was afterward withdrawn. You, however, were advised that the work had been done and fully acquainted therewith. Furthermore, you were furnished a copy of Professor Sadtler's report and a copy of Professor Wilcox's clinical report.

You state that we refused to be guided by your suggestion, yet we had no knowledge of the result of your investigation until your virulent attack was made in THE JOURNAL, September 1 and 15. From a communication received under date of Feb. 21, 1906, and signed by you, we quote:

> Three preparations are mentioned (in your advertisement) that have not been acted on (by the Council) Protan, Proferrin and Somnos, but my opinion is that that they will be approved for advertising in the form in which they now appear in the copy.

From the fact that an advertisement was accepted and published, inference is natural that our claims for Somnos had been found correct.

In you issue of September 15 you state:

> The attention of the officers of the Company was called to the matter (of Somnos), and it was hoped that they would submit a plain statement regarding the composition of the preparation and modify the literature to conform to the actual facts. This they did not seem inclined to do, at least they did not do it.

Every request for information from you for your Council has been freely and at once answered, and all additional data in our possession promptly furnished. No request was received from you to modify our literature in any way. How could you make such a request before you had your data? Why should we modify our claims when we were possessed of the facts mentioned, and in addition possessed voluntary communications from physicians above reproach supporting our stand?

On receipt of Professor Sadtler's report, our labels and literature were changed at once to conform therewith, and you were advised thereof. We did not change our labels and literature after statements had appeared in THE JOURNAL that Somnos is a mixture of chloral and glycerin, or a combination of the two held together so loosely as practically to amount to the same thing, because the only way to determine the truth of this statement was by physiologic and chemical investigations, and then we had in our hands such data to support our claims.

Prof. Colin C. Stewart's report states:

> In many instances in dogs it has been found impossible, within the limits of human endurance, to produce death in the manner described. Thus in one case 114 c.c. of the elixir (Somnos) were injected intravenously, and 30 c.c. administered by the stomach, in the course of three and three-quarter hours without fatal result. This total of 144 c.c. for the animal in question represented a dose of 11.75 c.c. per kilo, or fifty-one times the prescribed dose of 0.23 c.c. per kilo, corresponding to a dose for a 70 kilo man of 822.5 c.c. of Somnos, containing 45.24 gm. (696.7 grains) trichlorethidene propenyl ether, chemically equivalent to 42.02 gm. (647.1 grains) hydrated chloral.
>
> In two other dogs (II and III) the lethal doses were 68 c.c. and 108 c.c. respectively, corresponding to thirty-three and fifty-seven times the prescribed dose of 0.23 c.c. per kilo of body-weight. This is equivalent to doses, for a 70 kilo man, of 532.2 c.c. and 919.2 c.c. Somnos, containing respectively 29.27 gm. (450.8 grains) and 50.56 gm. (778.6 grains) trichlorethidene propenyl ether, chemically equivalent to 27.18 gm. (418.6 grains) and 46.96 gm. (723.2 grains) of hydrated chloral.
>
> The lowest lethal dose for dogs, representing for a 70 kilo (150 pounds) man 488 c.c., of Somnos, contains 26.83 gm. (413.2 grains) of trichlorethidene propenyl ether, chemically equivalent to 24.92 gm. (383.8 grains) of hydrated chloral.

These results could not have followed if Somnos was a mere solution or mixture of chloral in glycerin, or if Somnos resolved itself into chloral and glycerin on being taken. What hypnotic drug can with safety be administered in thirty-three times the normal dose?

Tests were not made with equivalent amounts of chloral for the reason that Somnos is not chloral, nor does it contain any free or uncombined chloral.

If reports made to us are correct, our conclusions must stand; if they have been incorrect, we are interested, and will gladly subscribe to results if observations are from competent observers.

The above statement regarding the commercial introduction of trichlorethidene propenyl ether (Somnos) is true; therefore, you and the Council should withdraw the charge of fraudulent intent. It would seem also a mere measure of justice that the Council publish the names of the investigators who did the work on which its report is founded. The question of the therapeutic value of any drug can only be settled by a collective investigation of the product in which the observations of competent investigators are repeatedly verified, and we are perfectly willing to abide by the results of such an investigation.

We now ask you to retract your statements:

1. That our house has "stooped to dishonest or unfair practices."

2. That Somnos is not a definite chemical product.

3. That Somnos contains free or uncombined chloral.

How can the work of Professor Sadtler on the chemistry, Prof. Colin C. Stewart on the pharmacology, the report of Professor Wilcox on the therapeutic value of Somnos be entirely ignored? Further than this, how can you subscribe to the statement that we have refused information when your latter files and ours, show abundant proof that the same has been fully offered and sent you.

We are justified in asking that the question of the pharmacologic and therapeutic results be submitted to a body of competent experts in physiologic therapeutics, to be mutually agreed on, and the results published in THE JOURNAL.

H. K. MULFORD COMPANY,
MILTON CAMPBELL, President.

THE JOURNAL is asked to retract the following statements:

(1) "That our house has stooped to dishonest or unfair practices."

(2) "That Somnos is not a definite chemical product."

(3) "That Somnos contains free or uncombined chloral."

Replying to 2 and 3 first. We have in no place claimed that Somnos is not a chemical compound, but have repeatedly referred to it as such; and we have never asserted that it contains free chloral, or chloral hydrate. We have only claimed that which the H. K. Mulford Company itself now admits to be the case, viz.: That Somnos is an unstable compound of chloral and glycerin which decomposes into its elements, chloral and glycerin, at about 104° F. Sadtler, in his report on the chemistry of Somnos, says:

The isolation of a definite compound resulting from the reaction of chloral on glycerin seems to be almost impracticable owing to its instability.

The Council has shown that the physiologic effects of chloral glycerate (Somnos) are identical with those of a corresponding amount of chloral hydrate. Mulford's letter states that Prof. C. C. Stewart (who performed the physiologic tests for the firm) did not make tests "with equivalent amounts of chloral." So long as the physiologic action of Somnos is the same as that of an equivalent amount of chloral (and the H. K. Mulford Company admits that it has no experiments to disprove this conclusion of the Council) it matters little whether or not it is a definite compound. We repeat that we have only stated what Mulford now admits: viz., that Somnos is an unstable compound. In fact, Frænkel in "Arzneimittelsynthese," p. 444, Edition 1906, states of chloral derivatives:

Only such compounds from which chloral is easily regenerated have the hypnotic effect, whereas more stable compounds have often a strong toxic effect, without the equivalent hypnotic effect of chloral.

Also, p. 446:

Only such chloral derivatives act as hypnotics from which the organism can split off the active chloral. The others act, owing to their chlorin content, as poisons, but not as hypnotics.

If the H. K. Mulford Company does not like the first alternative, we are satisfied to let it take the second.

It is requested that we retract our statement that "To say the least, it has not been honest and square in the matter." We would like to believe that the firm wanted to be "honest and square," and that it was misled in some way. How can we, however, when we consider the following:

While it was possible to express in simple English what this preparation is, "chloral glycerate" or "an unstable compound of chloral and glycerin," the firm put it out under the name "chlorethanal alcoholate"—a name which it now admits to be incorrect or misleading.

Apparently no thought was given to the physician on whom rested the responsibility of prescribing the drug; and this is a grave responsibility, both moral and legal, when it concerns a drug so toxic as chloral hydrate. Was this "honest" or "square"? Later, although admitting that Somnos is an unstable compound of chloral and glycerin and even pointing out the analogy between it and the compounds of chloral with water (ordinary chloral hydrate) and alcohol (chloral alcoholate) the firm, instead of stating this plainly to the physician, calls it "trichlorethidene propenyl ether"—a name which will not enlighten one physician in ten thousand, whereas the obvious name, chloral glycerate, would not be misunderstood by one physician in ten thousand.

Chloral plus water makes chloral hydrate.

Chloral plus alcohol makes chloral alcoholate.

Chloral plus glycerin makes chloral glycerate.

We are told:

Every request for information from you for your Council has been freely and at once answered, and all additional data in our possession promptly furnished.

What was desired and hoped for was that the H. K. Mulford Company would publish to physicians a "plain statement regarding the composition of the preparation and modify the literature to conform to the actual facts." This it did not do and has not done.

The letter states:

We had expressed the chemical composition of Somnos in technical language . . . to protect our interests.

This then is the firm's excuse for using as a description of Somnos chemical terms unintelligible to physicians. Accepting the truthfulness of this excuse we leave it to others to judge of its sufficiency. In plain English, terms are used that a chemist could understand, at least if he were sufficiently interested to look into the matter, but which not one physician in ten thousand could decipher. The chemist, however, and not the physician is the one who would imitate the preparation if any one did. To put it in other words, the H. K. Mulford Company claims that to protect itself against chemists it uses a nomenclature which chemists can understand, but which is unintelligible to physicians. But accepting this as the reason, it shows to what extent the spirit of gain is affecting our sense of right and wrong, when such an excuse can be calmly offered for not informing physicians of the character of the preparation.

So far as we can discover from the literature, Somnos was put on the market without a word to indicate whether it was a 5 per cent or a 20 per cent or a 50 per cent solution, or the pure chloral glycerate. Somnos was offered to physicians in such a way as not to indicate to them in any intelligible fashion that it was in any way related to chloral. Physicians must have prescribed it under the impression that it was the pure substance, since the synonym "chlorethanal alcoholate, $C_6H_{11}O_6Cl_3$," appeared directly under the name "Somnos" on the label and in the circulars. Was this "honest" or "square"?

The firm has been claiming that Somnos possesses "the hypnotic qualities of chloral without its untoward effects;" that it has "no toxicology;" that it is "harmless in twenty times the dose prescribed," etc., etc. (see brochure "Somnos"). It now states (see above letter) that "tests were not made with equivalent amounts of chloral" and C. C. Stewart (their own expert) states "twenty times the normal dose must be considered as an extremely dangerous quantity." Was it "honest" or "square" to the physician to make such reckless statements about the harmlessness of Somnos?

The letter asks:

How can the work of Professor Sadtler on the chemistry, Prof. Colin C. Stewart on the pharmacology, the report of Professor Wilcox on the therapeutic value of Somnos be entirely ignored?

To this we answer: (1) Prof. Sadtler's work confirms what we have been maintaining, viz., that Somnos is an unstable compound of chloral and glycerin: Sadtler says that "the isolation of a definite compound resulting from the reaction of chloral on glycerin seems to be almost impracticable, owing to its instability," although he is satisfied that he showed that such a compound exists. (2) To show that we did not ignore C. C. Stewart's report, we quote the following from the article, the "Pharmacology of Somnos," THE JOURNAL, A. M. A., Sept. 15, 1906, p. 873:

The writer (Stewart) states, page 19 (*Bull. Amer. Pharm. Soc.*): "As nearly, therefore, as can be determined by experiments on the lower animals, twenty times the normal dose must be considered as an extremely dangerous quantity."

To this we added:

Yet this firm has been sending broadcast throughout the country the statement that Somnos is "harmless in twenty times the dose prescribed."

We also commented on the fact that Stewart reports no experiments on the toxicity of chloral hydrate. We considered every statement Stewart makes and repeated his experiments and found that while large amounts of Somnos may be injected into animals, slightly larger amounts of a 5 per cent solution of hydrated chloral could be given before death resulted. The experiments of the Council show that chloral hydrate is safe up to a certain point and Somnos is safe up to the same point. Equivalent doses have practically the same effect in producing sleep, in depressing the heart's action, in depressing the temperature, and in producing death. Bearing the above in mind, and remembering that the firm admits now that no comparative

tests were made with chloral hydrate, was it "honest" and "square" to publish the following comparative statements, which we copy from Mulford's advertising booklet, "Somnos:"

CHLORAL HYDRATE.	SOMNOS.
Acute poisoning.	Harmless in twenty times dose prescribed.
Deep coma.	Coma unknown.
Weak, irregular, slow, feeble pulse.	Heart never depressed, pulse strong, regular and full.
Diminished respiration and lividity.	Respiratory center stimulated, rather than enfeebled.
Destruction of red corpuscles.	No effect on the blood.
Abolition of reflexes.	Cerebral effects never so profound.
Skin cold.	Skin warm.
Temperature subnormal.	Temperature uninfluenced.
Chronic poisoning.	No toxemia.
Craving soon established.	Craving never established.
Gastrointestinal irritation.	Always absent.
Erythematous eruptions.	Unknown.
Dyspnea.	Respiration ever calm.
Disturbed mental equilibrium.	Mentality clear, sensorium normal.
Somnos has no Toxicology.	Somnos habit is unknown.

(3) As regards Professor Wilcox's report, we prefer to postpone comment until physicians compare the results obtained with a 5 per cent. elixir of chloral hydrate with those obtained with Somnos (a 5 per cent. elixir of chloral glycerate). So long as the strength of Somnos was held as a "trade secret," comparisons with other hypnotics had little value. Professor Wilcox closes his report by saying, "evidently, we are closely approaching the standard hypnotic which I postulated in 1897." In a circular issued by Parke, Davis & Co. we read this, also written by Professor Wilcox in 1900: "Chloretone is our closest approximation to that theoretical hypnotic toward which we have been led through a study of the working hypothesis of the sleep-phenomenon."

As regards Mulford's proposition to have our experimental observations repeated and verified by competent investigators, we should gladly welcome such an investigation and publish the results, of course, provided that the investigation be carried out in scientific detail and parallel experiments be made with equivalent quantities of chloral hydrate and chloral glycerate (Somnos). We would suggest as a first, and presumably a final, step, that Professor Stewart, who has already done the experimental work for the H. K. Mulford Company, be requested to carry out the parallel experiments.

Finally, we suggest that physicians who are in the habit of using Somnos compare the action of Somnos with that of chloral hydrate, remembering that 15 c.c. (one tablespoonful) of Somnos contains the equivalent of 0.75 gm. (12 grs.) of chloral hydrate.

Tastes of Mosquitoes.

PHILADELPHIA, Sept. 15, 1906.

To the Editor:—The editorial reference in THE JOURNAL, September 15, page 865, to some observations on the preferences of mosquitoes in the matter of clothes, leads me to call attention to a source of error in such experiments. Some years ago a bulletin of the Hygienic Laboratory of the United States Public Health and Marine-Hospital Service detailed experiments on different colored stuffs with a view of determining if mosquitoes possess color preferences. I have not the bulletin at hand, but my recollection is that yellow was found to be least sought.

The error that enters into such tests is that the avoidance of some colors may be due to the odor of the dyestuff and not to the color. Many of the yellow colors now in use are nitro-derivatives, and even a very minute exhalation of a nitro-compound would be likely to be objectionable to the insect. Apart from this, many of the coal-tar dyes have perceptible odors, particularly when warm. HENRY LEFFMANN.

Interstate Reciprocity and Frauds in Medical Schools.

SAN FRANCISCO, Sept. 18, 1906.

To the Editor:—In THE JOURNAL, September 1, is a letter from Dr. Dudley Tait bearing the above title. The first portion of Dr. Tait's letter will be passed over and only that portion reviewed which deals with the case of Mr. Painton and the College of Physicians and Surgeons of San Francisco.

A portion of the truth may sometimes be so manipulated as to be more unjust and a greater misrepresentation than a direct falsehood. Mr. Painton is a graduate of an accredited high school. He is also a graduate of one of the California state normal schools. In addition to that, he has done much post-graduate work in scientific and literary branches. That places him above the required standard of the present California medical law in regard to his preliminary education. At the time that Mr. Painton matriculated in the College of Physicians and Surgeons he was justly entitled to advanced standing in certain branches, which advanced standing was not then prohibited, either by law or by regulation of the state board. The College of Physicians and Surgeons was then giving a continuous course of instruction, which plan of instruction is still in vogue in some of the leading medical schools of the United States. Since then, the course has been changed to conform to the requirements of the Association of American Medical Colleges. Mr. Painton, being poor in pocket, had to earn his own way. He did teach a portion of each of two years. In addition to the credits to which he was entitled, he took the summer courses, doing some work in both the medical and pharmacy departments, taking all the regular examinations in each portion of the work he pursued. In the medical department he took all the work required by the rules of the Association of American Medical Colleges, in addition to the credits which he might have claimed by reason of his studies previous to matriculating in medical college. He did this during the first two years of his course. The change in the course necessitated his taking the last two years' work at a time in the year which precluded his teaching. In these last two years he proved himself a good and intelligent student. He passed all his examinations and received no conditions. All these facts the college records show. Dr. Tait did not consult the records nor any member of the college faculty before writing his letter.

A word is necessary concerning catalogues. It is a well known fact that a college catalogue is not an official record of either time of study or proficiency, but a mere list of the students matriculated by a college. This is true of all colleges. There is not a university or college catalogue on earth in which many faults might not be found. It is a mere announcement, and has no legal standing such as has the records of the college. Many students matriculate, and are catalogued, in every school in this country every year, who may not remain in school a month. That has nothing to do with the standing of the college or the proficiency of the student.

In view of all these facts, is it just to brand a respectable man as a fraud, because in the first place he is poor and has to earn his own way, and in the second place because he did his studying at one season of the year rather than another? Must a college be condemned because one individual finds fault with its catalogue, and that without any knowledge of the records of that college? Must a man be branded as a fraud because his work is ignored for the reason that it was done in the summer months rather than in the winter months? It is a gross injustice for one individual to accuse a man of fraud because his work was done in a different manner from that in which it is now done. The making of a law or a regulation of an examining board retroactive is contrary to the intent of any law or regulation. Nothing but a retroactive construction of the regulations of the state board could have denied to Mr. Painton the right to take his examination. Had he been admitted to the examination, there is no reason to doubt his ability to have passed the examination in a highly creditable manner. ETHAN H. SMITH

Interstate Reciprocity in Medical Licensure.

MUNCIE, IND., Sept. 13, 1906

To the Editor:—Interstate reciprocity in medical licensure is of such importance to the medical profession that it should be well understood. Recognizing the excellent professional worth and influence of my good friend, Dr. E. B. Harvey, secretary of the Massachusetts Board of Registration in Medicine, and believing that he is in error in certain particulars in his discussion of reciprocity in THE JOURNAL, Aug. 25, 1906, I desire to discuss the same subject briefly.

The doctor admits that in the enactment of medical laws in the several states, the idea of protecting the people was made so prominent that the least benefit or convenience of the physician was not considered. For this reason and because under the constitution of the Union we can have no such thing as a national medical practice act, license under which would extend to the entire nation, thousands of good men are professional prisoners, each in his own state. For these men there are two sources of professional liberty: One is reciprocity between the states; the other is a re-test of qualification by examination in each state in which they desire to practice. The former plan is more practicable and equitable than the latter. When a man has once submitted to all the tests of qualification of his own state, and in doing so has submitted to the test of qualification required at that time in the states in which he may in future desire to practice, there is no good reason why he should be required to submit again and again to the inconveniences of re-examinations, provided satisfactory documentary evidence of the adequacy of the former test is furnished.

The doctor is all mixed up on the meaning of reciprocity. He sees the term, and hence the question, only in its political and commercial meaning. It has a broader meaning than he gives it. To reciprocate means: "To return an equivalent; to make a return in kind; to give and receive favors and benefits mutually."

Interstate reciprocity in medical licensure means, as now in practice under the rules of the American Confederation of Reciprocating, Examining and Licensing Medical Boards, an agreement by each state in the compact, to admit to medical licensure without re-examination, any licentiate of any other state, who has submitted to all the tests of qualification, required at the time of such test, by the state where the license is sought. The rules of the confederation, and such independent rules as each state may employ, are for the purpose of determining and making reasonably sure that each applicant is competent and worthy. Each state extending this courtesy to a sister state asks in return, and has a right to expect, a reciprocation of the courtesy. Reciprocity is not a requirement of the law in any state, but it is a discretionary privilege extended by the law to the state medical boards. If the law in any state does not permit this privilege, then that state can not have reciprocity and the law should be amended.

The proposition that "Reciprocity is impracticable unless it conserves the needs of society, and protects the community from charlatanisms," implies that if it does these, it is practicable. I hope to show that these are two of the things that it does accomplish.

When state boards are in proper reciprocal relation they are under agreement to aid each other reciprocally in preventing charlatans from skipping from one state to another for the purpose of deceiving and defrauding the afflicted. When the states are in proper reciprocal relation any board would be venal that would knowingly recommend to a sister state a scoundrel or an incompetent. The purpose of reciprocity and the actual effect among the 25 states now in the confederation, tends as a rule, to keep at home, where they are known, the professional vampires who have unfortunately obtained a legal right to practice, and to furnish professional liberty to the clean, competent men of the profession.

Reciprocity between states, according to the compact of the American Confederation of Reciprocating Boards, provides for just such reciprocal assistance and information as will enable a state board to mark the charlatan and to deny him recognition. The Ohio board does not know the charlatans of Indiana, but, Ohio and Indiana being in a reciprocity compact, Indiana furnishes Ohio information as to the moral and professional character of each man who desires to go from Indiana to Ohio on reciprocity, and Ohio reciprocates this favor. No state left to itself can as well protect itself as when it has the aid and coöperation of other states. Some medical vampires can pass a state board examination who could not get reciprocity and should not have it.

The doctor says that: "Reciprocity confers exclusive privileges on certain persons." In another paragraph he says that "reciprocity does not discriminate." Of course he could not be right in both statements. He is right, however, in one. Reciprocity does confer exclusive privileges on certain persons that are worthy and well qualified, and the vicious and incompetent are excluded.

Dr. Harvey says that under reciprocity in medical licensure "Maine would say to New Hampshire, we will permit your physicians to locate in Maine and will grant them a license without imposing any restrictions whatever as to their qualification, provided you will receive our physicians on the same conditions," and then knocks down this man of straw of his own production by calling it "free trade." This statement reveals the whole trouble with those who oppose reciprocity, namely: a complete misunderstanding of the basic requirements of reciprocity in medical licensure, which is uniform adequate qualification. No state board holding membership in the American Confederation of Reciprocating Boards would consider for a minute an applicant for reciprocal endorsement who could not establish his competency by incontestable evidence. The evidence must include the history of his preliminary and medical education; his moral and professional character, and his endorsement and recommendation by the board before which he furnished final test of qualification. If Dr. Harvey had known this, his Maine-New Hampshire illustration certainly would not have appeared in print. His hypothesis being wrong, his conclusions can not be right. The truth is that no two states under their laws could have such an agreement, nor hold membership in the confederation of reciprocating boards under such practice. Qualification is the chief corner-stone of medical reciprocity as set out in the constitution and by-laws of the American confederation and provided for by the several qualifications adopted by the confederation.

The statement that "reciprocity favors the admission into a state of high requirements, ignorant and incapable men from states of low requirements," is made in support of the proposition that "reciprocity deteriorates the standard of medical education." If this were true, then it would deteriorate the standard of medical education as contended, but the very reverse is true, because a state having high legal requirements admits, under reciprocity, only those who have submitted to like high requirements in the state from which they come. Neither a state nor individual is eligible to the privileges of reciprocity except by meeting the standard of the state whose license is sought. Hence all the advantages, privileges and benefits of reciprocity can be and are being used as incentives to bring up the standard of the states of low requirements. A reciprocity privilege is a badge of qualification, and hence of honor, and not to be despised by the profession.

Just here permit the suggestion that under the compact of the American Confederation of Reciprocating Boards, the rights of each individual board in each state are duly respected. Each board reserves the right to sit in judgment in the case of each applicant. Under this compact, a board in considering the rights of an applicant for registration by reciprocity can draw on the board of any sister state for information and facts relative to the applicant, and in no other way can so full information be obtained.

The argument is made that if reciprocity be adopted that unless all holding license in a state be admitted to equal privileges of reciprocity without regard to qualification, that it would be unconstitutional. This is erroneous, because reciprocity between the states, as provided for by law, is a discretionary privilege, extended to the state boards, and not a mandatory requirement; besides, the exclusion of the incompetent and vicious, and the admission of the competent and worthy by a reciprocity agreement between the states, is not "class legislation," as contended, no more than the same would be when done by state legislature, and none question the right of the legislature to exclude the incompetent.

The contention that reciprocity would be inequitable because some state boards are too lenient in the examination of applicants as shown by the small per cent. of failures, while others scrupulously perform their full duty as evidenced by the large number of failures, should be considered in the light of all the facts. It must be remembered that under the laws in some

states the boards are required to examine all applicants, regardless of previous preparation or qualification. An applicant must be examined regardless of the kind of college in which he has studied, or even if he has attended no college. He may be a graduate or he may not. He may never have seen a medical college; he may know nothing of medicine. Of course, a large per cent. of this class of undergraduates would fail. In other states, as in Indiana, only graduates of good colleges; men who have studied medicine four full years, and passed a satisfactory examination before a competent faculty and graduated; having previously acquired adequate preliminary education, are eligible to examination before the state boards. Of this class of high-grade graduates in medicine a smaller per cent. will fail. Again, it should not be forgotten that an examining board, under certain conditions, may be unjustly exacting.

On the hypothesis, however, that an evil does exist, I ask how is it to be corrected? Can it be done by leaving the boards to themselves? Or can it be sooner remedied by a reciprocity compact between the boards whereby the influence of all the states can be employed in demanding and assisting in its correction? Neither the state medical examining board nor the profession in any state will long submit to the odium of exclusion from rights and privileges because of inferiority of the law, or dereliction of duty by the board. Hence, reciprocity, with the light of publicity attending it, is the best possible remedy for an evil of this kind. No American physician should be satisfied because some states have reached a high standard of medical education, but should strive to bring all to the same high plane.

Under the rules of reciprocity, as now established and practiced, a state board can not only ask for the certified facts as to the registration of an applicant in the state from which he comes, but can demand the evidence of his qualification as given in his test before the state board where his primary registration occurred, including his examination papers. Hence, under reciprocity each state board must show its hand.

This fact kills Dr. Harvey's illustration of the young man who, following the line of least resistance, takes his examination in an easy state, and then attempts to go by reciprocity into one of more stringent requirements. The light of publicity is the best remedy for an evil. Reciprocity furnishes publicity and turns on the light, and tends to secure uniformity in medical education, legislation and administration.

If the New York wife seeking divorce in the Dakotas were compelled to take with her certified evidence from the New York courts with a recommendation from the New York authorities that the divorce be granted, in order to secure the decree of divorce in Dakota, she would probably stay at home and behave herself, as the quack must do under reciprocity.

The argument is submitted that reciprocity is of "limited usefulness." So is everything else. All men would not need the advantage of reciprocity, and there are some men in every state who could not get it, but deserving men who want reciprocity, and are entitled to it, should not be deprived of it on this account. Reciprocity can not be general and universal, in the sense of including states that do not furnish adequate tests of competency, or individuals that are unworthy or incompetent.

During the last few years more than 1,000 excellent men, representing a majority of the states of the Union, have obtained reciprocity in medical licensure, showing that reciprocity has at least a degree of practicability.

As a substitute for reciprocity, it is contended that the several state boards should be given "discretionary powers," to be exercised in the interest of "experienced and notable men of the profession." The reciprocity provision in the medical laws gives discretionary power; not, however, to be used arbitrarily in the interest of "experienced and notable men in the profession," but to be used in accordance with fixed and definite principles and rules of equity agreed on by all the states in the compact, so that uniformity may obtain and that all competent and worthy men may be treated alike, whether "notable" or not. Hundreds of the best men of the profession are quiet and unobtrusive, not known outside their own state, but can furnish incontestable proof of splendid competency. Reciprocity takes care of these men as effectually as it does of the "experienced and notable men of the profession," such as "professors and teachers in the medical colleges."

Again, it is claimed that reciprocity is in violation of the doctrine of "state sovereignty" and, hence, impracticable. It is difficult to understand just what is meant by this, or how state sovereignty could prevent a state from exercising its legitimate rights. One would think that a believer in state sovereignty would not question the right of a state to establish the necessary rules for the reciprocal recognition of the official acts of other states. To talk about state sovereignty, and then turn about and say that the states have not the right to make a reciprocity agreement, is inconsistent. State sovereignty, if it means anything, means the right of the state to do anything in the interest of its people which does not conflict with the organic law of the nation, nor abridge the rights of the people of other states. State sovereignty favors reciprocity between the states if it has anything to do with it at all.

W. A. SPURGEON,
President of the American Confederation of Reciprocating Examining and Licensing Medical Boards.

State Board Results in the Educational Number.

SPRINGFIELD, ILL., Sept. 17, 1906

To the Editor:—Please allow me space to dwell further on the erroneous conceptions which may be gained by the casual reader through a misinterpretation of the significance of the data in the Educational Number of THE JOURNAL, August 25.

I have now before me a printed postal card which I believe has been sent broadcast, bearing the bold-faced caption, "Failures of Chicago Graduates," and giving a list of the different medical colleges of Chicago with the percentages of failures of their students before the "different state medical examining boards throughout the United States during the year 1905." THE JOURNAL, Aug. 25, 1906, is quoted as the authority for the figures.

This card shows the National Medical University as the Chicago medical college established over five years having the smallest percentage of failures, with the Northwestern University Medical School and Rush Medical College in the second and third place, respectively. The reader, conversant with the standing of the two older colleges among the medical institutions of the state, is at first skeptical, but on referring to your Educational Number (Table A) he finds that the author of this card is fully supported by your figures, and was guilty of no misrepresentation when he quoted THE JOURNAL as his authority.

This incident illustrates forcefully the danger of the publication of deductions drawn from data whose figures are not uniform in significance. To the vast majority of the readers of THE JOURNAL to whose attention this card may come, the statements on the card are fully substantiated by reference to your Table A, and they will not take the trouble to go further to ascertain the exact facts. We have here, in short, a very widely promulgated misconception, for which THE JOURNAL is unfortunately made to stand sponsor.

It is true, as you have said, that your readers were cautioned, in the editorial accompanying these data, to consider the conditions surrounding their origin, but it is my impression that a very large percentage of those who glanced over the deductions of your tables paid little or no attention to their discussion and explanation. The average reader is prone to accept conclusions, especially when based on figures, with little concern as to their source.

On an analysis of your figures we find that the National Medical University, the school credited with the highest standing, had 24 applicants who appeared before but 7 examining boards. One of these applicants failed to pass an examination. Northwestern University Medical School had 191 applicants before 27 boards, and 10 of these failed to pass an examination. Rush Medical College had 254 applicants before 30 boards, and 21 failed to pass an examination.

Of the failures of Northwestern 6 were before boards which rejected from 25 to 50 per cent. of all applicants from other states. Of the failures of Rush Medical College 10 were before

boards rejecting 25 per cent. or more of applicants from other states. The National had but 1 gradute before any board which rejected more than 25 per cent. of applicants, and that one failed.

As I said in my communication in THE JOURNAL, September 15, "we might as well eliminate from our data the showings of colleges whose graduates have appeared before only a small number of boards, as these showings indicate little as to the ability of the graduates of such schools to pass the average state board examination."

It is obvious that percentages drawn from the successes and failures of the National Medical University and the other two institutions are in no way comparable. I am not prepared to say what success the graduates of the school given highest place would have attained before a larger number of boards, but for 1905 the percentage is based on results before an insufficient number to give an adequate idea of the standing of any school. Still THE JOURNAL, through the publication of these deductions and percentages, is compelled to stand sponsor for statements which are very widely promulgated and used to influence the young men of the country in the selection of the place for their medical education.

JAMES A. EGAN,
Secretary, Illinois State Board of Health.

EDITOR'S NOTE: Our correspondent refers to a postal card which, although anonymous, leaves little doubt as to its source. It is to be noted how skilfully its author, by the use of the words "colleges established five years or more," omitted one college, an evening school, which happens to have a still lower percentage, by reason of having had only one graduate examined outside of Illinois and he failing. A college that had received, in an exceptional year, and often from a combination of circumstances, an unusually low percentage of failures could hardly be blamed for taking advantage of it, since another opportunity might never occur. That it should send out anonymous statements, for the purpose of conveying a wrong impression, as the cards referred to doubtless were sent out, only adds to the suspicion with which at least one Chicago college is regarded. This suspicion our correspondent seems to share. If the suspicion is not well founded, why is it not as fair for one college to be shown up as having received a low percentage as another? As to the figures being insufficient, the college had 29 graduates, 24 of whom took the examination. This would seem to be a large enough proportion for a fair basis for figuring the percentage.

The statistics published are uniform except in degree in which they never could be uniform, and therefore could never be strictly "uniform in significance." Because a casual reader may form a wrong conclusion or because a college so inclined may publish half-truths for selfish purposes, are not good reasons for withholding from publication statistics which are of absolute value to the careful reader.

While there are bound to be differences between the percentages of the same college from year to year, each year hereafter will furnish larger totals from which to make deductions and then the deductions, of course, will have added value. For the past three years the figures for Chicago colleges are as shown in the accompanying table. It will be noted that the college which appears first on the anonymous postal card takes a back seat at this table.

Book Notices

PROBLEMS IN ANIMAL METABOLISM. A Course of Lectures Given in the Physiological Laboratory of the London University at South Kensington in the Summer Term, 1904. By J. B. Leathes, Lecturer on Physiology in the Medical School of St. Thomas's Hospital. Cloth. Pp. 205. Price, $2.00. Philadelphia: P. Blakiston's Son & Co., 1906.

If one may judge by the activities of writers and publishers, our English colleagues appreciate—somewhat better than we seem to do—the importance of recent progress in biologic chemistry for the solution of medical problems. Recently we reviewed in these columns two books written with the object of rendering these advances accessible to medical readers; namely, Mann's "Chemistry of the Proteids," and Hill's "Recent Advances in Physiology and Biochemistry." Of similar purport is this book by Leathes, which is based on a course of lectures given in the physiologic laboratory of London University with the object of presenting to medical students in correlated form the results of recent studies in biologic chemistry, in so far as they apply to human physiology and to medicine. An introductory chapter discusses briefly the modern theories and discoveries concerning the chemistry of the proteids and other constituents of the animal body, as well as the essential features of enzyme action. The metabolism of carbohydrates, fats and proteids is then considered, together with a separate chapter on the metabolism of cyclic compounds. Included in these chapters are brief discussions of the metabolic abnormalities, such as glycosuria, pentosuria, alkapton uria, cystinuria, acetonuria, etc. As this book is based on a series of lectures given for the purpose of popularizing an intricate subject the material has been handled with the object of emphasizing principles rather than of exhaustively considering all of the known facts. The author has succeeded well in accomplishing this purpose, and the physician who desires to familiarize himself with the progress in the fundamental principles of animal metabolism will find in this book an attractive and concise discussion of the subject. One is impressed with the excellent selection of illustrative examples used by the author in explaining various theories and hypotheses. On the other hand, a tendency to form exceedingly involved sentences robs these essays of much of that clearness

TABLE SHOWING RESULTS OBTAINED BY GRADUATES OF CHICAGO COLLEGES IN EXAMINATIONS BY STATE EXAMINING BOARDS HELD DURING THE YEARS 1903, 1904 AND 1905.

	Chicago Colleges.	Examined in all States.				Examined in Illinois.				Examined in Other States.				No. of States Examining.
		Total.	Passed.	Failed.	Per Cent. Failed.	Total.	Passed.	Failed.	Per Cent. Failed.	Total.	Passed.	Failed.	Per Cent. Failed.	
1	Northwestern Univ. Med. School	477	460	17	3.6	217	217	0	0.	260	243	17	6.5	29
2	Rush Medical College	784	732	52	6.6	359	357	2	0.6	425	375	50	11.8	29
3	Coll. of Physicians and Surgeons	790	729	61	7.7	450	447	3	0.7	340	282	58	17.1	31
4	Hering Medical College	55	50	5	9.0	30	29	1	3.3	25	21	4	16.0	17
5	American Med. Missionary College	48	43	5	10.4	11	11	0	0.	37	32	5	13.5	20
6	Hahnemann Medical College	204	182	22	10.7	132	129	3	2.3	72	53	19	26.4	23
7	American Coll. of Med. and Surg.	77	65	12	15.6	60	55	5	8.3	17	10	7	41.2	9
8	Jenner Med. Coll.	54	44	10	18.5	49	42	7	14.3	5	2	3	60.0	5
9	Bennett Medical College	77	62	15	19.5	45	43	2	4.4	32	19	13	40.6	17
10	National Med. University	65	51	14	21.5	49	39	10	20.4	16	12	4	25.0	9
11	Illinois Med. College	164	121	43	26.2	69	61	8	11.6	95	60	35	36.8	32
12	College of Medicine and Surgery	63	39	24	38.1	52	36	16	30.8	11	3	8	72.7	8
	Dearborn Med. Coll.*	47	46	1	3.4	46	46	0	0.	1	0	1	100.0	2
	Totals	2905	2624	281	9.7	1569	1512	57	3.7	1336	1112	224	16.7	

* Unclassified, since figures are for two years only, and all but one were examined in Illinois.

which is so essential to a successful popularization of technical topics, and partially offsets the admirable selection of the subject matter.

MEDICAL JURISPRUDENCE, FORENSIC MEDICINE AND TOXICOLOGY. By R. A. Whitthaus, A.M., M.D., Professor of Chemistry, Physics and Toxicology at Cornell University, and Tracy C. Becker, A.B., LL.B., Counsellor at Law, Professor of Criminal Law and Medical Jurisprudence in the University of Buffalo. Second edition. Pp. 996. Price, $6.60. New York. Cloth. William Wood & Co., 1906.

In this volume are considered the various topics of pure medical jurisprudence. The legal relations of physicians and surgeons to their patients, as witnesses and in suits for malpractice, with a synopsis of the laws of the various states on these subjects, form the section on medical jurisprudence proper. This is followed by the thanatologic division of forensic medicine, including the legal status of the dead body, the powers and duties of coroners, autopsies, personal identity, the time of death, and the action of heat, cold and starvation. Numerous cases are cited illustrating the various subjects.

Marriages

AUGUST H. GORENFLO, M.D., to Miss Hattie Clippert, both of Detroit, September 12.

JOHN W. HOFFMAN, M.D., to Miss Edna MacPherson, both of Detroit, September 26.

GEORGE C. WALLACE, M.D., to Mrs. Jane B. Odell, both of Detroit, September 15.

MARION T. BENSON, M.D., to Miss Sallie May Bagley, both of Atlanta, Ga., September 12.

HENRY ADSIT, M.D., Hornell, N. Y., to Miss Peachy P. Brown, at Baltimore, September 15.

J. HENRY DOWD, M.D., to Miss Louise Lyman, both of Buffalo, N. Y., September 17.

CLARENCE L. SIX, M.D., to Miss Genevieve Peters, both of Stockton, Cal., September 3.

JOHN L. HALLIDAY, M.D., to Miss Tacy Graff, both of Wellington, Kan., September 22.

HOMER L. D. JENKINS, M.D., Hughes Springs, Tex., to Miss Ella B. Keasler, September 2.

EDGAR D. RUSH, M.D., Celina, Ohio, to Miss Eva Morton, of Fletcher, Ohio, September 10.

LEWIS CLYDE BIXLER, M.D., Pittsburg, to Miss Ida Evans, of Easton, Pa., September 19.

RALPH A. DALBEY, M.D., Youngstown, Ohio, to Miss Centell, of Philadelphia, September 19.

PAUL GUILFORD, M.D., to Miss Ethel Margaret Hamline, both of Chicago, September 19.

ROBERT S. MCCOMBS, M.D., Philadelphia, to Miss Richenda Pratt, of Carlisle, Pa., September 8.

SAMUEL L. ADAIR, JR., M.D., to Miss Grace Ethel Thompson, both of New Washington, Ind., September 15.

STANLEY A. E. BRALLIER, M.D., Conemaugh, Pa., to Miss Emma Hillock, of Philadelphia, recently.

WILLIAM CAMMACK, M.D., Salem, Iowa, to LIBBIE SEYMOUR, M.D., of Iowa City, Iowa, September 12.

JOSEPH G. MAHONEY, M.D., Shelton, Conn., to Miss M. C. Fahy, of New Haven, Conn., September 6.

IRVING WAGONER METZ, M.D., Springfield, Ill., to Miss Edith Mabel Thorp, of Havana, Ill., September 26.

FRANCIS LE ROY SATTERLEE, M.D., to Miss Mary Philipse Iselin, both of New York City, September 19.

CLARENCE J. WHALEN, M.D., Wellsville, N. Y., to Miss Lena Loughley, of Coudersport, N. Y., September 11.

SIMON F. EARNEST, M.D., Philadelphia, to Miss Emma J. Meily, of Deodate, Pa., at Annville, Pa., September 7.

JAMES H. HARTWELL, M.D., to Miss Mary Lewis Dicksin, both of Stewartsville, Va., at Roanoke, Va., September 15.

ALBERT J. UNDERHILL, M.D., Baltimore, to Miss Carrie Robb, Brown, on Miles River, near Royal Oak, Md., September 15.

BENJAMIN C. STEVENS, M.D., Logansport, Ind., to Miss Alice Mertz, of Burnettsville, Ind., at Riverside, Ill., September 18.

A. C. WOLLENBERG, assistant surgeon, U.S.P.H.&M.-H. Service, to Miss Florence Zoe Allen, of Detroit, September 22.

LIEUTENANT FRANK THOMAS WOODBURY, assistant surgeon U.S. Army, to Mrs. Caroline Townsend Fremont, at Manila, P. I., September 12.

Deaths

Philip Skinner Wales, M.D. University of Maryland School of Medicine, Baltimore, 1856; captain and medical director United States Navy, retired; surgeon general of the Navy from 1879 to 1884; who entered the service, Aug. 7, 1856, and attained his present grade Oct. 15, 1881, serving eight years and five months at sea and twenty-one years and two months on shore duty, and was retired Feb. 27, 1896, died suddenly from cancer of the intestines in the Hotel de St. James et d'Albany, Paris, September 15. His body will be embalmed and brought to Annapolis, Md., for burial.

Henry H. Ruger, M.D. Jefferson Medical College, Philadelphia, 1865; a pioneer citizen of Devil's Lake, N. D., who served from 1876 to 1882 at Fort Abercrombie, Fort Totten, various Missouri River posts and in a number of military expeditions against the Indians west of the Missouri; county commissioner of Ramsey County for many years; representative in the Territorial Assembly in 1885; examining surgeon of the pension department and health officer of Ramsey County, died at his home in Devil's Lake, September 12, aged 67.

Walter C. Jackson, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1852, who played a prominent part during the yellow-fever epidemic in Montgomery, Ala., in 1853, and was a resident of that city until his death; once president of the city board of health and for several terms a member of the common council; one of the oldest and best known practitioners of Montgomery, died at his home in that city, September 20, after an illness of three days, aged 79.

Henry Halbert Deming, M.D. Chicago Medical College, 1868; a member of the American Medical Association, Illinois State Medical Society and Chicago Medical Society; one of the founders and at one time president of the Chicago Hospital; formerly a practitioner of Pana, Ill., but for a number of years a well known and esteemed physician of Chicago, residing on the South Side, died suddenly while making a professional call, September 22, from angina pectoris, aged 61.

J. R. Anders, M.D. Memphis Hospital Medical College, Memphis, Tenn., 1904, who went to Central American ports last winter as representative of the Mississippi Board of Health with the party of southern health officials to study sanitary and quarantine conditions, and who was in charge of Rosetta during the yellow-fever epidemic last year, died at his home in Gloster, Miss., September 15, from typhoid fever, after an illness of several weeks.

Sherman T. Brown, M.D. Gross Medical College, Denver, Colo., 1897; a member of the American Medical Association, demonstrator of anatomy in Gross Medical College and one of the most prominent young surgeons of Denver, was taken ill with appendicitis while performing an appendicectomy in Mercy Hospital, and died in that institution Septemebr 15, three days after operation, from postoperative pneumonia, aged 32.

William Henry Lilly, M.D. New York University, New York City, 1860; assistant surgeon and later surgeon of the Fifty-second North Carolina Infantry, C.S.A., in the Civil War; a member and once vice-president of the Medical Society of the State of North Carolina; for 37 years a resident of Concord, N. C., and one of its most prominent physicians, died at his home in that city, September 12, after an invalidism of about a year, aged 72.

Evander J. Goodsell, M.D. Cleveland Medical College, Medical Department of Western Reserve College, 1880; a member of the American Medical Association and one of the oldest and best-known practitioners of Norwalk, Ohio, died at Lakeside Hospital, Cleveland, September 19, a short time after an operation for gangrenous appendicitis and intestinal obstruction.

George F. Lightfoot, M.D., New York Homeopathic Medical College and Hospital, New York City, 1891; formerly a member of the board of health and health officer of Kearney, N. J., a practitioner of Arlington, N. J., died in St. Michael's Hospital, Newark, N. J., September 17, from kidney disease, after an illness of several years, aged 41.

Leonard Darling White, M.D. Harvard University Medical School, Boston, 1883; for many years a member of the board of health of Uxbridge, Mass., and for the last 10 years assistant medical examiner; a member of the Thurber Medical Society of Milford, died suddenly at his home in Uxbridge, September 18, from heart disease, aged 47.

Frank W. Selman, M.D. Medical College of Indiana, Indianapolis, 1903; assistant surgeon Third Infantry, Ind.N.G.; secretary of the board of health of Greenfield, Ind., and a member of the Hancock County Medical Association, died suddenly at his home in Greenfield, September 11, from cerebral hemorrhage, aged 25.

Samuel G. Courtney Pinckney, M.D. College of Physicians and Surgeons in the City of New York, 1893; a specialist in nervous disorders and part owner of the Peachtree Sanitarium, Atlanta, Ga., died at Grandview-on-the-Hudson, September 20, from pulmonary disease, after an illness of a year, aged 37.

Jay Greenwood Wilson, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1867; United States consul at Ponce, Porto Rico, and later a special inspector of customs in the United States treasury department, died at his home in Washington, D. C., September 10, aged 66.

John M. Lefevre, M.D. McGill University, Medical Department, Montreal, 1879; gold medalist of his class; chief surgeon of the Western division of the Canadian Pacific Railway, died at his home in Vancouver, B. C., September 17, after a short illness, from nephritis, aged 53.

Pinckney McDonald Bruner, M.D. Medical College of Alabama, Mobile, 1861, for two terms a representative to the legislature from Conecuh County, died at his home in Evergreen, Ala., September 11, after an illness of several months, aged 74.

Edwin B. Payne (Years of Practice, N. D.); a veteran of the Civil War; the first physician of McHenry County, and for 12 years coroner of that county, died at his home in Towner, N. D., August 15, from dropsy, after an illness of six months, aged 62.

Arthur Knight, M.D. Eclectic Medical Institute, Cincinnati, 1876; a veteran of the Civil War, and since then a practitioner of Sauquoit, N. Y., died at his home, September 16, from cerebral hemorrhage, after an illness of more than two years, aged 65.

Thomas J. Williams, M.D. Rush Medical College, Chicago, 1893; interne in Cook County Hospital in 1894 and 1895; physician of Leadville and of Lake County, Colo., shot and killed himself in his office in Leadville, September 19, aged 43.

William M. Oates, M.D. College of Physicians and Surgeons, Baltimore, Md., 1894, health officer of Bridgeport, Ohio, died at the North Wheeling (W. Va.) Hospital, September 18, from typhoid fever, after an illness of two weeks, aged 34.

James F. Munn, M.D. College of Medicine, Syracuse (N. Y.) University, 1881, for 25 years a practitioner of Syracuse, died September 16, at the Hospital of the Good Shepherd in that city, from uremia, after a long illness, aged 55.

Joseph Lyle Thornton, M.D. Medical College of Ohio, Cincinnati, 1862, a pioneer educator of Ohio, died at his country home, near Middletown, Ohio, August 17, from arteriosclerosis, after an illness of six months, aged 79.

Dennis J. McCabe, M.D. New York University, New York City, 1898, was thrown from his carriage in a runaway accident near his home in Berlin, N. H., September 16, and died three-quarters of an hour later.

John S. McNaught, M.D. College of Physicians and Surgeons in the City of New York, 1846; a prominent and esteemed practitioner of Hobart, N. Y., died at his home in that city, September 8, aged 87.

William A. Dole, M.D. Jefferson Medical College, Philadelphia, 1901, a practitioner of Lyndon, Kan., for five years, was killed in a runaway accident two miles southeast of Lyndon, September 16.

George M. Reed, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1869, died at his home in Massillon, Ohio, September 8, after a lingering illness, aged 58.

Edward A. Wheeler, M.D. Bellevue Hospital Medical College, New York City, 1879, a member of the Kings County Medical Society, died suddenly at his home in Brooklyn, September 19, aged 55.

Levi J. Enders, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1876, died at his home in Williamstown, Pa., after a short illness, September 11, aged 52.

Blake Bigelow, M.D. University of Vermont, Medical Department, Burlington, 1883, of St. Regis Falls, N. Y., died in a hospital in Boston, September 13, from nephritis, aged 45.

Solomon S. Bachman, M.D. Long Island College Hospital, Brooklyn, 1870, for many years a practitioner of Easton, Pa., died at his home in Philadelphia, September 10, aged 69.

Aaron V. Talbert, M.D. Cincinnati Medical College, 1846, died at his home in Pasadena, Cal., July 4, from carcinoma of the stomach, after an illness of six weeks, aged 80.

Daniel Henry Brown, M.D. Medical College, of Indiana, Indianapolis, 1900, a colored physician of Indianapolis, died at his home in that city, September 19, aged 32.

Guy M. Brothers, M.D. Medical College of Indiana, Indianapolis, 1904, committed suicide at his home in New Paris, Ind., by taking cocain, September 19, aged 33.

Harvey R. Benham, M.D. Eclectic Medical Institute, Cincinnati, 1853, died at his home in Richmond, Ind., September 15, from senile debility, aged 83.

David H. Crisp, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1846, died at his home in Uvalde, Texas, June 25.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

A SENSITIVE TEST FOR ALBUMIN.

PADUCAH, KY., Sept. 14, 1906.

To the Editor:—In Volume XLVII No. 10, pp. 816 of THE JOURNAL, there is an excerpt from an article by Tognetti in the *Gazetta degli Ospedali*, Milan, describing a sensitive test for albumin. I want to know how long he allows the specimen to stand before deciding. He says "gradually throws down in a yellowish-white precipitate." HARRY A. SMITH.

ANSWER.—In addition to the description on page 816 we quote from the author as follows: "If there is no albumin in the urine, the opaque appearance, produced by the addition of the tanno-alcohol mixture and heating, vanishes as the hydrochloric acid is added. If, on the other hand, there is albumin in the urine, the opaque appearance persists even after the hydrochloric acid has been added, and in the course of about a quarter of an hour a yellowish white precipitate accumulates in the bottom of the test tube."

COLEY'S SERUM FOR INOPERABLE SARCOMA.

——, MICH., Sept. 18, 1906.

To the Editor:—Please inform me through THE JOURNAL what Coley's serum for inoperable sarcoma consists of and how and where it can be secured? Do you know anything about its success? S.

ANSWER.—Coley's serum is a mixture of toxins obtained by cultivating the germs of erysipelas for three weeks in cacao broth, inoculating this culture with *Bacillus prodigiosus*, and cultivating for four weeks longer. The mixture is then sterilized at 136° F. and the liquid used for hypodermic injection. The dose is 1 to 8 minims, beginning with a small dose and gradually increasing. The injections may be followed by high fever and the method is not entirely free from danger. A few persons have been reported as apparently cured by this method and some regard it with favor for postoperative treatment to prevent recurrence. The general opinion, however, seems to be that the treatment should be applied only to inoperable cases, and then must be regarded merely as an experiment. The serum is listed in the catalogue of Parke, Davis & Co., but we do not find it in that of any other firm.

HOW TO SUBSCRIBE TO FRENCH MEDICAL JOURNALS.

SAN ANGELO, TEXAS, ——.

To the Editor:—1. Please inform me as to the subscription price of the following French journals and the addresses of the subscription agencies to which the money must be sent: *Bulletin de l'Académie de Médecine, Presse Médicale, Semaine Médicale.*

O. H. JOHNSON.

ANSWER.—*Bulletin de l'Académie de Médecine;* publishers, Masson et Cie, 120 Boulevard Saint Germain, Paris, France. Subscription price, 20 francs, which is approximately $4.00 in United States currency and includes postage.

The *Presse Médicale* is a bi-weekly journal; publishers, Masson et Cie, 120 Boulevard Saint Germain, Paris, France. Subscription price 15 francs, which is approximately $3.00 in United States currency, and includes postage.

Semaine Médicale, edited and published by Dr. de Maurans, 53

avenue de Villiers, Paris, France. Subscription price, 10 francs, which is approximately $2.00 in United States currency, and includes postage.

A very convenient way of sending the money is by a postoffice money order made payable to the publisher of the journal.

METHOD OF FUMIGATING WITH FORMALDEHYD.

MANKATO, MINN., Sept. 13, 1906.

To the Editor:—Kindly give me the method of fumigating by formaldehyd by using permanganate of potash. I have heard much of the method and have consulted many authorities without success, so I take the liberty of asking you.

JOHN M. EDWARDS.

WARDSVILLE, ONT., CAN., Sept. 23, 1906.

To the Editor:—What is the cheapest and best chemical method of liberating formaldehyd gas for fumigating purposes? Is it considered as good as using one of the generators now on the market? W. H. RENNIE, M.D.

ANSWER.—These questions were answered in THE JOURNAL, July 14, 1906, page 139. A discussion on the relative amounts of the ingredients, consisting of letters from representatives of the state boards of health of Iowa and Illinois, will be found in THE JOURNAL July 28, page 288, and August 18, page 523. A further note on an experimental comparison of methods was printed September 22, page 952.

ALCOHOLIC STRENGTH OF COCAIN HYPODERMIC SOLUTIONS.

FISHERVILLE, ONT., CAN., Sept. 18, 1906.

To the Editor:—What proportion of alcohol (98 per cent. strength) should be added to a cocain or eucain B. solution for injection in the gums for tooth extraction in order to preserve the solution thoroughly? What would be the greatest alcoholic strength of a solution that could be used for hypodermic purposes that would not prove dangerously irritating or annoying?

M. D. BAKER.

ANSWER.—Alcohol in 10 per cent. solution will inhibit the growth of bacteria, according to W. H. Park ("Bacteriology in Medicine and Surgery"). Bartholow states that alcohol may be used hypodermically in the dilute form as whisky or brandy ("Materia Medica and Therapeutics," 10th edition). H. C. Wood ("Hare's System of Practical Therapeutics," 2d edition) says that 10 minims of tincture of digitalis (made with diluted alcohol) can be injected without causing serious local trouble. It is probable, therefore, that from 40 to 50 per cent. of alcohol could be used for hypodermic purposes without irritating. If properly made, solutions of cocain keep for some time without addition of an antiseptic. Probably chloroform water as a vehicle or phenol (1 minim of a 5 per cent. solution to 4 ounces) as used in the Schleich method, would be preferable to alcohol. It is preferable not to try to keep solutions of these substances long, but to make them fresh when needed.

CONTINUOUS WATER BATHS FOR BURNS.

NEW YORK, Sept. 10, 1906.

To the Editor:—In THE JOURNAL, September 8, in your answer to Dr. Burr's inquiry you speak of the disuse of the method for treating burns, which is attributed to Hebra. Permit me to state that the method has by no means been abandoned; on the contrary, it is still appreciated as the ideal one in extensive burns, only the American colleagues are not familiar with it. As the matter merits attention, I wish to give a few notes of historical studies which I have collected on the continuous bath in extensive burns.

Sept. 14, 1857, a fire broke out in the pyrotechnical laboratory in Frankfort on the Main. Of twenty persons burnt, seven had perished in the flames or died from inhaling obnoxious gases. Among the thirteen remaining who were taken to the hospital different degrees of combustion presented themselves. All these cases were treated by Dr. G. Passavant and all except those with burns on the head alone were given the continuous warm bath, according to the extent of the injury—the partial or the full bath. This is the first record I can find in literature of treatment of burns by the continuous warm water bath.

We see Passavant has treated extensive burns with the continuous bath in the year 1857 (his first publication of the method appeared in the year 1858), but Hebra writes in the *Allgemeine Wiener Medizinische Zeitung*, 1861, No. 43: "The continuous full bath given for therapeutic purposes and kept up for days, weeks and months has, as far as I am aware, never been tried or carried out by any one." He says he has made use of this method in three cases during the year 1860. His experience in the treatment of such injuries by means of ointments and caustics had been most unsatisfactory, and these sad experiences gave him the idea to make use of the continuous warm bath in case of extensive burns. He does not mention Passavant, whose article appeared in the best known German medical journal of that period, namely, the *Deutsche Klinik*, 1858, Nos. 36, 38 and 39. In the text-books—and I have examined a great many—Passavant is not spoken of either, but all credit of having introduced the method is given to Hebra.

Passavant says that he had had already good results before the year 1857 by using these baths in cases of combustion, and that he had been induced to utilize them in such cases on account of the analogy between the wounds of combustion and other wounds in which he had found the bath effective, and finally because he considered that the drawbacks attached to other methods of treatment of burns could be avoided by employing the continuous warm water bath. The injured, even those who had sustained extensive burns, suffered at first comparatively little, but after a while most violent pain. The action of the continuous bath is manifold. It gives almost immediate and even complete relief from such pain and can be considered as the most excellent anodyne. Even if it offered no other advantages it would be of great value on account of this soothing effect when the pains are most excruciating. Another advantage of the warm water treatment is that the water penetrates the burnt tissues, in consequence of which they remain moist and soft. Without the immersion the cuticle which has been destroyed in its whole depth would harden and form an impenetrable cover over the underlying parts. Immersed in water, tissues which have become gangrenous cannot dry up, but remain moist. They detach themselves easily and are washed away after having become detached. Thus the wound is constantly kept clean. There is no accumulation of pus, no crusts of desiccated wound secretion, and which is most essential, no dressing is required. The patient has not to suffer the often painful procedure of change of dressing. Langenbeck, who in the year 1850, introduced continuous immersion as a method of treating surgical wounds, characterized it as the mildest method, not requiring dressing, securing clean wounds in a way which could not be surpassed by any other method.

Concerning further and most essential advantages of the continuous warm bath in case of burns we have to study the physiologic action of the warm bath on circulation and innervation in general. I may be permitted to refer to the chapter on the continuous warm bath in my book, "Carbonic Acid in Medicine." Here I will only call attention to a few points. Since we, thanks to recent investigations, know more of the physiologic effect of the warm bath on circulation and innervation, we can explain better its importance, especially in severe burns. There are certainly many cases which would prove fatal without the advantage of this means, while with the aid of the continuous warm bath they make a good recovery. We know the serious effect of extensive burns on the nervous system, and here the continuous warm bath must be considered as the best of all remedies.

When a part of the body is placed in warm water, the nerve ends of the skin become irritated. This irritation is transmitted to the vasomotor nerves and is followed by dilatation of the blood vessels, and consequently by acceleration of the circulation. This accelerated blood circulation facilitates the elimination of the products of inflammation and infection, and with the removal of pyrogen substances and toxins through the general circulation, fever will be reduced. The warm baths are a means to stimulate metabolism, the principal desideratum when we have to deal with severe injuries needing great recuperative power. In a more elaborate paper I am preparing I intend to deal more fully with these points, and also to give the most interesting history of the therapeutic use of the continuous bath. Here only a few notes: Research in the history of the continuous bath as a therapeutic measure shows that its introduction has been ascribed to two German surgeons, Fritz and von Walther, who lived during the latter part of the eighteenth and the first quarter of the nineteenth centuries; others ascribe it to Baudelocque, the great obstetrician of the time of Napoleon I. Baudelocque made use of it in peritonitis. His method was revived by Noeggerath in the German Hospital of New York, but abandoned again after Noeggerath's departure.

The first who used the continuous bath in surgery seems to have been Paulus of Ægina, who lived in the seventh century under the reign of Heraclius, the Byzantine emperor. Paulus had patients, operated on for hernia, especially children, submersed in warm water for seven consecutive days in order to prevent inflammatory symptoms.

All these early advocates of the continuous bath, beginning with Paulus of Ægina, and later on Stromeyer and Langenbeck, in the explanation of the effects of the continuous bath pronounced although they did not say the name—antiseptic principles. All who have had experience with it will confess that it is still the most reliable antiseptic in extensive burns.

The continuous bath in therapeutics has not been appreciated as it should have been by American physicians. Dr. Dent, whose death we have reason to lament, was the first to introduce it in this country in the treatment of insane. A. ROSE.

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending September 22, 1906:

Lyster, Wm. J. L., asst.-surgeon, granted two months' and twenty-four days' leave of absence, about Oct. 6, 1906.

Miller, R. B., asst.-surgeon, granted 15 days' leave of absence.

LeWald, Leon T., asst.-surgeon, left Fort Slocum, N. Y., on seven days' leave of absence.

Fife, James D., asst.-surgeon, ordered to accompany Companies B and D, 4th Infantry, from Fort Slocum, N. Y., to Fort Mackenzie, Wyo.

Harvey, Philip F., asst.-surgeon-general, granted leave of absence for fifteen days.

Miller, E. W., asst.-surgeon, granted five days' leave of absence.

Carter, E. C., surgeon, granted 15 days' leave of absence.

Robbins, C. P., asst.-surgeon, will, on arrival at Madison Barracks, N. Y., with troops from Mt. Gretna, Pa., proceed to his proper station, Fort Ethan Allen, Vt.

Byars, Caspar R., contract surgeon, relieved from duty at Jefferson Barracks, Mo., and ordered to Fort Ethan Allen, Vt., for duty.

Harris, Herbert I., contract surgeon, ordered to Fort Riley, Kan., to accompany troops marching to Fort Snelling, Minn.

Macy, Fred S., contract surgeon, ordered from Fort Ethan Allen, Vt., to his proper station, Fort Adams, R. I., and granted leave of absence to Oct. 1, 1906.

Shellenberger, James E., contract surgeon, granted sick leave of absence for one month, with permission to apply for an extension of two months.

Porter, Elias H., contract surgeon, ordered from Fort Reno, Okla., to Fort Logan H. Roots, Ark., for temporary duty.

Gregory, Verdo B., contract surgeon, granted leave of absence for three months, with permission to visit the United States.

Stone, Frank P., contract surgeon, granted an extension of seven days to his leave of absence.

Navy Changes.

Changes in the Medical Corps, U. S. Navy, week ending Sept. 22, 1906:

Moore, J. M. surgeon, detached from *Franklin* and to *Newark*.

Bogan, F. M., P. A. surgeon, detached from *Marietta* and to New York Hospital for treatment.

Brown, J. L., asst.-surgeon, to duty with Recruiting Party No. 3.

Richardson, F. A., acting asst.-surgeon, home and await orders.

Iden, J. H., P. A. surgeon, to *Newark*.

Hoyt, R. E., P. A. surgeon, to Naval Academy, Annapolis, Md.

Asst.-Surgeons W. E. Schaller, I. F. Cohen, J. B. Kaufman, M. H. Ames, T. W. Raison, J. M. Minter, J. Flint, A. H. Allen, P. E. Garrison, J. O. Downey, A. H. Robnett, R. C. Ransdell, W. S. Kuder, J. P. Haynes, H. Butts, C. K. Winn, A. McK. Jones and H. L. Smith and Acting Asst.-Surgeons R. I. Longabaugh, W. G. Steadman, H. L. Dollard, E. P. Huff, M. C. Baker, F. D. Chappelear and E. E. Curtis to Naval Medical School, Washington.

Norton, O. D., surgeon, detached from *Yankee* and to *Missouri*.

R. M. Kennedy, surgeon, detached from *Missouri*, and to Bureau of Medicine and Surgery.

Wm. Seaman, P. A. surgeon, detached from Boston yard and to *Prairie*.

Murphy, J. F., P. A. surgeon, from Omaha Recruiting Office to *Georgia*.

W. H. Bell, surgeon, and Asst.-Surgeon J. P. DeBruler, report to Surgeon General, special duty.

C. C. Grieve, asst.-surgeon, to Omaha Navy Recruiting Office.

Dean, F. W. S., asst.-surgeon, to New York Navy Yard.

Dykes, J. R., asst.-surgeon, from New York Navy Yard to New Orleans Naval Station.

Block, W. H., acting asst.-surgeon, from New Orleans Naval Station to Navy Recruiting Party No. 4.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending September 19, 1906:

Stoner, G. W., surgeon, granted four days' leave of absence from September 8, under the provisions of Paragraph 189 of the Regulations.

Clark, Tallaferro, P. A. surgeon, granted leave of absence for two months from September 15.

Billings, W. C., P. A. surgeon, relieved from duty on the U. S. S. *Rush*, and directed to proceed to Vancouver, B. C., for duty in connection with the examination of aliens.

Korn, W. A., P. A. surgeon, relieved from duty at Perth Amboy, N. J., and directed to proceed to Reedy Island Quarantine Station and assume command of the service at that port.

Holt, J. M., P. A. surgeon, relieved from duty at San Francisco and directed to proceed to Columbia River Quarantine Station, Astoria, Ore., assuming command of the service at that port.

Glover, M. W., P. A. surgeon, relieved from duty at Vancouver, B. C., and directed to proceed to Sitka, Alaska, for duty on the U. S. S. *Rush*, relieving P. A. Surgeon W. C. Billings.

McCoy, G. W., P. A. surgeon, granted leave of absence for two months from October 4.

Smith, F. C., asst.-surgeon, relieved from duty at Detroit, and directed to proceed to Perth Amboy Quarantine Station, N. J., and assume command of the service at that port.

Ashford, F. A., asst.-surgeon, directed to proceed from Ellis Island, N. Y., to Philadelphia, for temporary duty.

McKeon, F. H., asst.-surgeon, relieved from temporary duty at Columbia River Quarantine Station and directed to proceed to San Francisco for duty and assignment to quarters.

Miller, W. W., asst.-surgeon, directed to proceed to Ellis Island N. Y., reporting to the Medical Officer in command for duty.

Wallenberg, R. A. C., asst.-surgeon, directed to report to the medical officer in command at Detroit, for duty and assignment to quarters.

Bean, L. C., acting asst.-surgeon, granted leave of absence for eight days from September 11.

Nute, A. J., acting asst.-surgeon, granted leave of absence for seventeen days from September 25.

Allen, G. C., pharmacist, granted leave of absence for two months, from September 28, 1906, without pay.

Van Ness, G. I., Jr., pharmacist, directed to report to Surgeon P. M. Carrington, chairman of board of examiners, to determine his fitness for promotion to the grade of pharmacist of the second class.

BOARD CONVENED.

A board was convened to meet at Fort Stanton, N. M., on the call of the chairman, for the examination of Pharmacist G. I. Van Ness, Jr., to determine his fitness for promotion to the grade of pharmacist of the second class. Detail for the Board: Surgeon P. M. Carrington, chairman; P. A. surgeon L. D. Fricks, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Sept. 21, 1906:

SMALLPOX—UNITED STATES.

Louisiana: New Orleans, Sept. 1-8, 4 cases, 1 death.
Massachusetts: Lawrence, Sept. 1-8, 1 case.
Montana: State, July 1-31, 90 cases.
New York: New York, Aug. 25-Sept. 15, 7 cases.

SMALLPOX—FOREIGN.

Africa: Cape Town, July 28-Aug. 4, 24 cases.
Brazil: Rio de Janeiro, July 29-Aug. 12, 4 cases.
Chile: Antofagasta, Aug. 12-19, 47 cases, 9 deaths; Coquimbo, July 14-27, 12 cases, 3 deaths.
India: Bombay, Aug. 7-14, 2 deaths; Calcutta, July 28-Aug. 4, 3 deaths; Karachi, Aug. 5-12, 2 cases, 1 death; Madras, Aug. 4-10, 2 cases, 2 deaths; Rangoon, July 28-Aug. 4, 1 case, 1 death.
Italy, General: Aug. 17-23, 6 cases.
Russia: Odessa, Aug. 19-25, 5 cases, 1 death.
Siberia: Vladivostok, July 21-28, 3 cases, 1 death.
Spain: Barcelona, Aug. 21-31, 8 deaths.
Turkey: Constantinople, Aug. 20-27, 1 death.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, July 29-Aug. 5, 1 case, 1 death.
Cuba: Habana, Sept. 5-18, 2 cases.
Honduras: Ceiba, Aug. 5-Sept. 1, present.
Mexico: Merida, Aug. 25-Sept. 8, 4 cases, 3 deaths; Tuxtepec, Aug. 26-Sept. 10, 10 cases, 6 deaths; Vera Cruz, Sept. 3, 1 case, imported.

CHOLERA—FOREIGN.

India: Bombay, Aug. 7-14, 77 deaths; Calcutta, July 28-Aug. 4, 6 deaths; Madras, Aug. 4-10, 5 deaths.

PLAGUE.

Brazil: Rio de Janeiro, July 29-Aug. 12, 5 cases, 2 deaths.
Egypt: Alexandria, Aug. 17-23, 10 cases, 3 deaths; Suez, Aug. 18-23, 3 cases, 2 deaths.
India: Bombay, Aug. 7-14, 33 deaths; Calcutta, July 28-Aug. 4, 17 deaths; Karachi, Aug. 5-12, 6 cases, 6 deaths; Rangoon, July 28-Aug. 4, 136 deaths.
Mauritius: July 6-13, 1 case, 1 death.
Turkey: Trebizond, Aug. 8-13, 8 cases, 3 deaths.

Medical Organization

CONCLUSIONS FROM A COMPARATIVE STUDY OF THE STATUS OF THE MEDICAL PROFESSION IN GREAT BRITAIN AND THE UNITED STATES.

J. N. McCormack, M.D.
Chairman of the Committee on Organization of the American Medical Association.
BOWLING GREEN, KY.

A good part of my vacation has been spent in the small towns and country districts of England, Ireland and Scotland, and I have been interested in such a study of professional conditions there as would enable me to institute practical comparisons between them and those existing in our own country. I made few inquiries into these matters in the large centers of population in Great Britain, because they are already so well understood, and on the Continent, both because my time was mainly spent in the large cities or resorts and because of a lack of familiarity with the language of the respective countries.

To begin with, my former impressions were confirmed that our physicians and surgeons of the first rank will bear more than favorable comparison with those of any other land. Especially in everyday practical work, as distinguished from the research work of the laboratory, our men have a power of individual initiative, of resource, dash—to use that term in its best sense—both in medicine and surgery, not excelled in any other part of the world.

On the other hand, I got the impression, even more distinctly, that, as the result of high standards of requirements, so long established as to be fixed policies of both the profession and of government, the rank and file of medical men in Europe have had such advantages in both preliminary and professional education that there is an entire absence of the illiterate, hopeless element which forms such a large substratum in almost every community with us, and which, in spite of the rapid advance in requirements in the last few years, must continue as a perplexity and reproach to the organized profession, and a danger to the people dependent on them, until removed by time and the hand of a kind providence. Here, probably about in equal proportion as among the highly educated classes with us, a physician may be a failure for lack of practical knowledge, of the common sense essential to real success in any vocation, but, at least, he is not an ignorant loon, who does violence to his mother tongue every time he opens his mouth or writes a prescription. His preliminary and technical education have not only been such as to develop all that was possible in him, but to give him a respect for his profession, and to command a respect for it in his community, in striking contrast with what is common with a varying but considerable percentage of the profession in many sections of our own country who never should have been considered for admission to its ranks.

Because it deserves it, for the reasons stated, the profession as a whole occupies a very much higher place in the public estimation than with us. The evidence of this is seen on every hand. Health and medical legislation are far more advanced than with us, and the laws are more easily enforced, because of the solid and intelligent support of the courts and other official classes, as well as the habit of respect and obedience which these conditions naturally have engendered. Contrary to a general impression, quackery, in the forms so flagrant and offensive with us, is practically unknown here. There is some quackery, it is true, some "patent-medicine" advertising, but, as compared with what we have in most states, it is so quiet and subdued as to be almost respectable. It has no hold on their highly educated clergy, little influence with the press, and none, so far as I was able to gather, over the officials corresponding to our governors, congressmen and senators. In the same way, and for the same reasons, Christian science and other similar fads and fancies, which have taken such a hold on the educated and wealthy classes in many sections of our country as to cripple the profession greatly in its efforts to secure and enforce legislation necessary for the protection of the most vital interests of the people, and to rob it of the cream of the support to which it is so justly entitled, are subjected to authoritative scientific tests, if considered worthy of notice at all, in which the profession has a trusted voice and influence. This is illustrated in the case of Keeley, who has found it impossible to secure the support of the educated classes, which here, in contrast with our side again, always includes the official classes. I have verified this information by constant examinations of the advertising columns of the newspapers and magazines. No form of quackery can for long rob any people without the aid of its press and clergy, and our profession can not too soon be awakened to the importance of bending every energy in enlisting these agencies in the support of honest scientific medicine.

Although the cost of living is much less here, the profession is better supported than with us. In my judgment, this is because the profession deserves it. The fees are certainly better on an average, than in the older sections of our country, and the collections, in which most of our physicians are especially weak and unsystematic, are far better. This is partly because the profession has been longer and better organized, and both it and the people better trained in such matters, and probably still more because the line is sharply defined as to charity practice. The employment of medical men on fairly remunerative salaries to attend the poor is an established system, and those unable to pay for services go to the hospitals or on the rates, except of course, the worthy classes, God's poor, who find the doctor their best friend in every land. Special training is required of health officials, in addition to the ordinary medical course, but once a competent man has passed the examination and been appointed to public position, the tenure is more certain and is free from political control.

It is almost a universal custom here for physicians to dispense their own drugs, especially in the towns and country districts. Nearly all offices are in the residences and usually there is an assistant to aid in dispensing and in dressings, often some member of the family who has been given special training for such duties. This, and the usual limitation of his practice to a small area, make the life of a medical man far easier than with us, and, being near his family and library, his opportunities for social and literary enjoyment are far greater. As a result of these advantages and of his high preliminary training, nearly every one of them was found more or less enthusastic in some special scientific or literary study outside of his profession. One was a botanist, another an ethnologist or archaeologist or linguist, and the effect on the individual, on the profession as a whole, and on the community could not but be for the best.

The pleasant thought in connection with this whole matter was that it has required the continuous efforts of generations of devoted medical men, often under difficulties as great as any which can ever confront us, to bring about the present comparatively favorable, but far from ideal, conditions. They have never had any advancement in the same length of time to compare with what ours has been within the last quarter of a century. In the light of their experience and our own, we only need to maintain and to foster such wise and conservative policies for another generation as will constantly command the confidence and coördinate the efforts of every honest and worthy interest of the profession to enable us to contend generously for supremacy and to take the lead in scientific medicine, as our people hope to do in all our other relations.

Society Proceedings

COMING MEETINGS.

Medical Association of District of Columbia, Washington, Oct. 2
Idaho State Medical Society, Lewiston, Oct. 4-5.
Colorado State Medical Society, Denver, Oct. 9-11.
Delaware State Medical Society, Wilmington, Oct. 9.
Medical Society of Virginia, Charlottesville, Oct. 9-11.
Kentucky State Medical Association, Owensboro, Oct. 10-12.
Vermont State Medical Society, Barre, Oct. 11-12.
American Association of Railway Surgeons, Chicago, Oct. 17-19.
Mississippi Valley Medical Association, Hot Springs, Ark., Nov. 7-8.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Nineteenth Annual Meeting, held at Cincinnati, Sept. 20-22, 1906.

Under the presidency of DR. JOHN YOUNG BROWN, St. Louis.

Officers Elected.

The following officers were elected for the ensuing year: President, Dr. Robert T. Morris, New York City; vice-presidents, Drs. George W. Crile, Cleveland, Ohio, and Charles L. Bonifield, Cincinnati; secretary, Dr. William Warren Potter, Buffalo, N. Y. (re-elected); treasurer, Dr. X. O. Werder, Pittsburg, Pa. (re-elected).

The time and place of next meeting were left to the executive council.

After the transaction of routine business the reading of papers was begun.

Kidney and Colon Suspension by the Use of the Nephrocolic Ligament and Gerota's Capsule.

DR. HOWARD W. LONGYEAR, Detroit, said the ligament is described as formed by an aggregation of fine fasciculi originating in and being identical with the fibrous tissue forming the framework of the fatty capsule of the kidney, which, after enveloping the kidney in a fine network, passes downward and are inserted into the posterior wall of the ascending colon on the right side, and the descending colon on the left side. Its structure, as well as its action, may be compared to that of the network covering a balloon, the cords of which descend downward and support the car. The kidney is the balloon and the cecum the car; the kidney descends or not, according to the laxity of its supports and the degree of traction exerted on it by the cecum. Dr. Longyear claimed that the traction thus exerted on the kidney by the bowel is the prime factor in the causation of nephroptosis, and as the duodenum is also displaced by reason of its adherence to the fatty capsule, the first object of attainment in any operative procedure should be the suspension of the bowel. To do this he isloates the nephrocolic ligament through the usual incision (though shorter) in the loin and suspends the bowel by overlapping and sewing flaps made from Gerota's capsule through the loop of

the ligament. This also holds the kidney in suspension, but this object he considered second in importance to the suspension of the bowel.

Fixation of the Kidney by Shortening of the Nephrocolic Ligament.

DR. CHARLES A. L. REED, Cincinnati, presented a brief clinical report of cases operated on by the application of the principle, but a modification of the technic, as presented by Dr. Longyear at the meeting last year. The essential modification of the technic consists of the control of the nephrocolic ligament through an oblique incision in the intercostal interval.

The Technic of Kidney Fixation.

DR. J. HENRY CARSTENS, Detroit, pointed out that to fix a kidney permanently it is necessary to resect the fibrous capsule and to fix this firmly to the muscle as near to the normal position as possible. Only in this way can a kidney be firmly and permanently fixed. He described a simple operation which he said could be done in 10 minutes through a very small opening, and that it would give permanent results, and it seemed to him an ideal method of permanently fixing a kidney.

DISCUSSION ON THE KIDNEY SYMPOSIUM.

DR. HERMAN E. HAYD, Buffalo, described various methods he had resorted to for fixing a kidney. He said it is not possible to fix a kidney unless one delivers it so as to produce a certain amount of adhesive union between the kidney and the loose structures which it has occupied so long.

DR. EARL HARLAN, Cincinnati, said that to understand the subject of dislocated kidney thoroughly one should be familiar with the normal anatomic relations of the surrounding organs, the nerve supply and circulation of the parts, and have a correct knowledge of the attachments and relations of the peritoneum. He called attention to the very wide range of pathologic anatomy attendant on kidney dislocations, and showed that any operative procedures, which have for their intention the correction of the numerous symptoms connected with this trouble, must be based on a correct rearrangement of the normal anatomy of the parts in the right upper quadrant. He described at length an operative technic which he had found satisfactory, inasmuch as it was based on the normal anatomy of this region.

These papers were further discussed by Drs. James F. Baldwin, Columbus, Ohio; John B. Murphy, Chicago, and Joseph Price, Philadelphia, all of whom described methods of anchoring loose kidneys.

(To be continued.)

WASHINGTON STATE MEDICAL ASSOCIATION.

Seventeenth Annual Meeting, held in Spokane, Sept. 11-13, 1906.

Under the presidency of DR. GEORGE W. LIBBY, Spokane.

Better Care of the Insane Needed.

In the address of welcome Governor Mead stated that the insane hospitals of the state have been carried on on a purely philanthropic basis, and that he believes that no expense should be spared for suitable salaries for those who take care of the insane, as the state should have the benefit of the best medical service that can be furnished. He also said that the state can do a great deal more good than has been done in the prevention of tuberculosis.

In his annual address the president, Dr. George W. Libby, characterized the system of caring for the insane as inadequate, crude and even suggesting barbarism, and said that the laws by which the unfortunates are committed to the care of the state are not characteristic of the twentieth century civilization, but are relics of the dark ages. In his opinion, to determine whether an individual should be committed to an insane asylum, the investigation should be conducted by a commission composed of at least three physicians, one of whom should be an alienist and should visit the patient in his home. He also favored the establishment of a separate institution for the criminal insane.

To Prevent Blindness of Infants.

The association adopted resolutions favoring the passing of a law providing that any nurse who shall notice any inflammation of the eyes of an infant up to the time the child is two weeks old shall report the case to a competent physician, the penalty for failure to make such report being a fine of not more than $100 or imprisonment for six months, or both.

Supervision of Sanitary Works and Water Supplies.

The sanitary engineer of the State Board of Health also proposed a law, making it prohibitory for any municipalities, corporations or public institutions or persons to introduce a new system of water supply or sewerage in the state of Washington unless the plan for such proposed water supply or outlet for such proposed sewerage system shall have been examined and approved by the Washington State Board of Health.

The association favored the adoption of a uniform standard of medical examinations.

A resolution was passed asking that the state legislature fix the fee of physicians for examining persons charged with insanity at $10.

Election of Officers.

The following officers were elected: Dr. James H. Lyons, Seattle, president; Drs. Edwin L. Kimball, Spokane, and Ellsworth E. Shaw, Walla Walla, vice-presidents; Dr. Curtis H. Thomson, Seattle, secretary; Dr. George H. McGreer, Tacoma, treasurer, and Drs. Frank A. Scott of Pierce County, Hiram M. Read, King County, F. H. Luce, Lincoln County, James R. Yocom, Tacoma County, Robert L. Thompson, Spokane County, Henry W. Dewey, Pierce County, George W. Overmeyer, Pacific County, Lemon R. Markley, Whatcom County, Wilson Johnston, Whitman County, and C. N. Suttner, Walla Walla County, members of judicial council. The 1907 meeting of the association will be held in Seattle.

ST. LOUIS MEDICAL SOCIETY.

Meeting held Sept. 15, 1906.

The President, DR. GEORGE HOMAN, in the Chair.

DEDICATION OF NEW MEDICAL AUDITORIUM.

The auditorium is located on a piece of ground adjoining the St. Louis Medical Library Building, Thirty-fifth and Pine streets. It is built in amphitheater form, with about 400 opera chairs and room for many more seats for special occasions. It has a handsome beamed ceiling and dependent chain chandeliers. The walls are polished brick.

Introductory Address by President.

DR. HOMAN said in part: "Three score and ten years ago lacking a few months, this society was ordained by an act of the General Assembly of Missouri, the expressed purpose of such legislation being the improvement of medical literature and science, and to give dignity, permanency and usefulness to this body. This body has never had a roof above it that could be called its own. The exercises arranged for this evening are in celebration of the fact that finally this reproach has been put away.

"That the present happy achievement was made possible may, it is believed, without invidious reflection, be traced to the wisdom of the society in 1895 in the selection of its treasurer who, on his induction into office, found claims amounting to several hundred dollars, and almost nothing in the treasury with which to meet this indebtedness. But gradually, by prudence, thrift and good management, better business methods were introduced; and, after eight years of such faithful service, when he was called to the presidency, a very comfortable bank account had been accumulated to the credit of the society, and from this nest egg has sprung the edifice in which we are now assembled. The funds thus made available for investment in this property have been supplemented by contributions secured chiefly from the membership, and while the individual response to this appeal has been liberal as a rule, all things considered, still the names of very many of our members have not as yet appeared in the list of givers to this cause, but the hope is confidently indulged that such oversights and omissions will promptly be repaired when the situation is better understood.

"There are present here to-night some who have come down from a former professional generation, and who have personal

knowledge of the vicissitudes and embarrassments that beset and confronted the organized profession here in earlier years, progress being hindered perhaps by bickering or belligerency, often due to mere misunderstanding or imperfect acquaintance, and leading to occurrences that were regrettable and sometimes even injurious to the advancement of scientific work and the promotion of lasting harmony among brethren.

"Happily for us of to-day, a more pacific spirit seems now to be in the air, a disposition to cultivate peace that extends even to nations which are rivals and competitors in many fields, and if this spirit can be brought sensibly to bear in the sharp contentions of races and governments, there is small excuse for a different manifestation among those so advanced in humane civilization as the medical profession is universally conceded to be.

"As the climate of feeling and opinion generally appears to have become more moderate, this occasion presents a most fitting opportunity to express the sincere hope that no wrongful or unkind contention between members may ever be brought across the threshold of this building; that the supreme, the controlling obligation of thorough, honest, unflagging scientific work shall never be lost sight of within these walls; that the doors shall never be closed to the truth, howsoever unwelcome it may appear at the time or by whom presented; that this roof-tree shall be broad enough to afford hospitality and welcome to every honest thinker who believes that he has a new message to deliver for the betterment of his fellow-men—in short, that here is a temple dedicated to truth, science, progress; consecrated to peace, concord, unity, good will, so that the generations yet to come may be the better for our lives and labors, and gratefully say: 'They are justified in their works: they builded even better than they knew!'"

Early History of Society.

DR. LEGRAND ATWOOD, one of the oldest living members of the society, said, among other things, that his acquaintance with the society dates back to 1846, when he first attended its meetings. The first discussion he had heard on the floor of the society was one between Drs. Johnston, Hammer and McPheeters. These men were faithful to the requirements of the profession. He said that the first attempt at organization of this society occurred on Dec. 25, 1835, when a meeting was held in the old Masonic Hall in this city. Dr. William Carr Lane was once president of the society. Dr. Lane was elected eight times mayor of the city of St. Louis, only refusing the office again because of stress of professional labor. The speaker called attention to the greatness of Dr. Lane from a medical as well as from a civic standpoint, and said that he hoped that at some future time the physicians would succeed in having a monument erected to him in City Hall Square. At the meeting above alluded to the society was formed and organized. At a meeting on Jan. 2, 1836, the constitution was adopted. The officers for 1836 were: Dr. B. G. Farrar, president; Dr. Lane, vice-president; Dr. B. B. Brown, recording secretary, and Dr. Y. B. Bolling, treasurer. On Jan. 15, 1836, the by-laws were drafted and adopted. The first paper read before the society in regular session assembled was entitled "Does Epidemic Contagious Puerperal Fever Exist in St. Louis?"

Dr. Farrar was the first American physician in St. Louis. The other physicians were French. On Sept. 24, 1836, the St. Louis Medical Society appointed a committee to confer with the faculty of the St. Louis University, relative to the establishment of a medical school in this city. Later in the same year the society took up the matter of disciplining some members who were advertising in the daily papers. The society also took up the matter of keeping a record of births and deaths, which forms the basis of the present-day mortality records of the health department. Dr. Barret at this time offered a resolution governing the sale of milk, which is the first attempt at pure-food legislation here. A committee took up the matter of preventing the spread of contagious diseases.

In 1850 the society adopted the Code of Ethics of the American Medical Association. In 1877 the society adopted a resolution that only medical men be appointed health commissioners of the city. In 1887 Dr. McPheeters introduced a resolution calling for the creation of a real estate and building committee, for the purpose of securing a permanent home for the society. The project was dropped on account of inability to secure money enough to buy the property.

Reports of Committees.

DR. R. M. FUNKHOUSER, chairman of the finance committee, reported briefly that there was a small balance of the money subscribed by the members remaining, but that several thousand dollars had been borrowed from the bank to complete the building of the auditorium. He stated that he was ready to receive new subscriptions to cover this loan.

DR. PINCKNEY FRENCH, chairman of the committee on business affairs, received the keys of the building from the president and addressed the members on the need of paying off the loan spoken of by Dr. Funkhouser. Dr. French proved that his reputation as a financier was well grounded by obtaining practically all the needed money, he leading off with a generous subscription, followed by Drs. Outten and Homan and others.

DR. A. R. KIEFER, chairman of the building committee, and Dr. John C. Morfit, chairman of the committee of arrangements, also reported.

Medical Profession of St. Louis of To-day.

DR. W. B. OUTTEN ascribed the difficulties in the past in the way of unification of the city's profession to the Civil War and its political effect thereafter. He said that up to 1864 the profession was powerful, influential and united in its work in St. Louis, that St. Louis was a great medical center, but that from 1864 to 1895 elements adverse to the St. Louis medical profession took deep root and hampered the work. He said that in spite of the great adversity and strife in the ranks of the profession, the St. Louis Medical College lived on. He rendered a tribute to this college for its unflinching spirit in times of adversity. For the future he predicted great things of the St. Louis Medical Society and the profession of that city.

Future of the Medical Profession of St. Louis.

DR. W. G. MOORE called attention to the altruistic work of the men who have attended regularly the meetings of the city and state societies, men who have gone by circuitous roads of travel to state meetings, neglecting their business purely for the purpose of maintaining an organization. He spoke of the great work of organization of local and county societies, which has been so well stimulated by the American Medical Association. He said that this society will become the society of the young men before him. The young men must perpetuate it.

ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES.

Fifteenth Annual Meeting, held in Buffalo, N. Y., Sept. 11-14, 1906.

(*Continued from page 956.*)

The Russian Red Cross.

COL. VALERY HAVARD, assistant surgeon-general U.S.A., described the origin, development and history of the Russian Red Cross Society, which was founded during the Crimean War as the "Committee of the Exaltation of the Cross." In 1867 the name was changed to "Russian Society for the Assistance of Sick and Wounded Soldiers," and in 1876 the society assumed its present name. The society was organized under the laws of the empire and has active and honorary members, contributors and benefactors. The executive power is vested in a central committee, to which state and local committees report. For the work of the society during the Russo-Japanese War, Manchuria and eastern Siberia were divided into five zones, and the work undertaken included the establishment of supply depots, transportation of the sick and wounded, assistance to the medical military service, direction of the relief of the sick and wounded, and the organization of feeding stations. The author believes that such societies are invaluable and indispensable in war, and that a Red Cross society to be efficient must be not only well organized, but

every member should acquire a practical knowledge of first-aid and should have had experience in the handling of patients.

Tendon Tissue versus Catgut.

COL. NICHOLAS SENN, surgeon-general, Ill.N.G., gave a history of ligatures and suture material. The first animal ligatures were introduced by Dr. Paul Eve, Nashville, Tenn., and Dr. Christian Linde, Oshkosh, Wis., who used for this purpose split deer tendon. Lord Lister was the first to show the way to the successful employment of antisepsis in suture and ligature material, and the principles which he taught still remain. Silk, silver wire, horsehair and silkworm gut will continue as substances for removable sutures, but can not hold their present position as material for buried sutures. The material known as catgut is not the intestine of the cat, but is made from the small intestine of the sheep, and is open to the objection that it is exceedingly difficult to sterilize and render aseptic. Tendon tissue, in the author's opinion, is preferable to catgut, because it is made of straight fibers running parallel with each other; and because it is obtained from the cleanest part of the animal. It is stronger than catgut, which is made up largely of muscular tissue. It does not loosen as does catgut under the influence of moisture, and tendon material can be made aseptic by the same methods as catgut. In 1878 Ischiguro, surgeon general of Japan, made a report on whale tendon, which he advocated for suture material. The so-called kangaroo tendon, which had a great vogue, is not made from the tendon of the kangaroo, but from a smaller animal of the same family, the wallaby. The author advocated the use of the tendons of the arctic sea animals, the narwhal, walrus, whale, etc. The tendons on either side of the spine are used for this purpose, and in the case of the narwhal they can be split into fine threads, four feet or more in length. The walrus tendon is coarser, but possesses similar advantages, and the same applies to the tendon from the back of the whale. Dr. Senn has used this coarser tendon with success in operations for the radical cure of hernia and recommends its use for suture and ligature material on account of the abundance of the supply and the inexpensiveness when once on the market. He stated that he obtained in the arctic region last summer a supply of tendon material sufficient for the use of a large hospital for an entire year, in exchange for a pound or two of powder.

Identification by Finger Prints.

SURGEON CHARLES P. WERTENBAKER, U.S.P.H.&M.-H.S., called attention to the fact that no two persons have identical finger prints, and spoke of the interest in the development of the identification of individuals by this means. The method consists in taking an impression of the lines or markings on the thumb or one or more of the fingers. The thumb is pressed lightly on an ordinary rubber stamp pad and then pressed firmly on the surface which is intended to receive the impression. The value of the system results in the fact that the lines of the fingers of no two persons are alike and that the lines of the fingers of an individual are unchanged from the date of his birth until the time of his death. The markings of the right and left hands are practically the same, except that the lines run in opposite directions. The marks of all fingers also are practically the same. Identification by the use of finger prints has been in use in China for several centuries. In India the British government adopted identification by finger prints in lieu of signatures in legal documents, receipts, etc., many years ago, because of the difficulty in securing the names of individuals which, under the peculiar conditions existing there, frequently changed. Last summer while on duty during the yellow-fever epidemic in the South Dr. Wertenbaker employed this method to prevent the transferring of certificates of persons traveling in certain portions of the South, to show that they had not been exposed to the infection of yellow fever. This practice, which was general, he completely stopped by adopting the following method of identification: A description of the individual, giving his nationality, age, height, color of hair and eyes and special marks; the signature and the impression of the ball of the right thumb. Finger marks may be classified as open loops, closed loops, "S" loops, whorls, and varieties combining the previously named classes. The United States Army has recently ordered that the thumb and finger-print system of identification be introduced in the recruitments for the Army, supplanting the outline figure card, and the finger prints, together with the photograph, now form a part of the descriptive card of each recruit. Dr. Wertenbaker considers this method less complicated and more sure than the Bertillon method of examination.

Splenic Abscess Following Malaria.

SURGEON WILLIAM H. BELL, U.S.N., read a paper based on three cases of splenic abscess, following as a complication to grave malarial infection. He discussed the pathogenesis of the condition and emphasized malaria as a disease important in the etiology of splenic abscess, demonstrating theoretically why the conditions should be of frequent occurrence. He suggested a procedure for direct experiment to determine the tenability of the theoretical premises, and concluded with a review of the symptoms and signs of the disease, and remarks on prognosis and treatment.

(*To be continued.*)

BRITISH MEDICAL ASSOCIATION.

Seventy-fourth Annual Meeting, held in Toronto, Ontario, Aug. 21-25 1906.

(*Continued from page 959.*)

SECTION OF ANATOMY.

ARTHUR ROBINSON, M.D., Birmingham, the president, in his introductory remarks on "The Teaching of Anatomy in Universities and Public Schools," gave a sketch of the history of the teaching of anatomy. Men of an inquisitive turn of mind first studied it, so that they might know as much as possible about themselves and their fellows. They probably hoped that a knowledge of the structure and arrangements of the various parts of the body would be of service in the attempt to meet and avoid those infirmities and diseases which they knew to be the precursors and the possible causes of death. The knowledge thus acquired was utilized by those who undertook the treatment of injuries and diseases of the human body, and gradually the study of the details of human anatomy passed into the hands of priests, who provided for the bodies as well as for the souls of their flocks, and later into the hands of the members of the medical profession.

There is still a tendency in some quarters to decry the wider knowledge of anatomy as a science and to insist that the medical student shall be taught only the technical details of the human anatomy, that is, the position of organs and parts and their relationships to each other. Nothing could be more harmful to the best interests of the medical profession and the public than the adoption of such a view. It would result in the medical man becoming a mere mechanic, who can do well what he has been taught to do or has seen done, but who is absolutely useless when he desires to do something that requires general as well as special knowledge. Fortunately there are many broad-minded men in the profession who have recognized that the man who has a wide knowledge of general principles is better adapted to meet unexpected circumstances than the one who is provided merely with a memory of certain observed facts. Consequently, the teaching of anatomy in a large number of institutions has passed into the hands of men who are enthusiasts in its teaching and study, and have spent the greater portion of their lives in the study of the subject. This should be still more the case in the future. This forward movement is attended by the danger that specialists occasionally lose sight of the practical application of their work and teach only its more interesting features from a scientific viewpoint. This danger will be avoided if the electing bodies of teaching institutions employ as teachers only men who have been through the medical curriculum and understand the needs of the profession.

Teachers of anatomy should also habitually take part in the meetings of medical associations, and thus keep in touch with the general knowledge of the profession and its relation-

ship to their special branch. The object of the medical curriculum is to give the student a wide knowledge of the principles on which he must rely in the practice of his profession, a sufficient knowledge of the details to prevent the making of any serious mistake, and a sufficiency of general knowledge to enable him to take his place as an accepted member of a medical community. It should, therefore, be the object of the anatomist to avoid engaging the student in a superfluity of details. He should insist on a sound knowledge of the general relationship of the most important parts of the body, and a good knowledge of the general principles which underly these relationships and the advantages derived from them. He should make his students acquainted with the general laws of growth and development and abnormal conditions produced by deviations from these laws. He should draw attention to the relation of man to other animals in all cases where such relations are evident. In addition, he should see that his students acquire a sufficient knowledge of the details of the various parts of the body and their relationship to enable them to cope successfully with any emergency of daily life, but he should impress on his students that it is more important that they know the various principles on which the various systems or organs are constructed and those on which they are modified, than that they should memorize the details, which may be found at any time in the numerous text-books.

SECTION OF PHYSIOLOGY.

Proteid Nomenclature.

PROF. W. D. HALLIBURTON, M.D., F.R.C.S., the president, in his introductory remarks considered the question of proteid nomenclature. The recommendations of the Chemical Society of London, several years ago, have never been universally adopted by those who write or speak English. This committee suggested the termination of *ol* for alcohols, *ine* for basic substances, and *in* for materials of more indefinite structure. In America, where some support should have been anticipated, the non-conforming conscience has asserted itself with the resultant tendency toward Germanizing rather than Anglicizing chemical names. Thus creatine is spelled kreatin; sulphur, sulfur, and the final e in chlorides, sulphates and other salts is usually absent. He then took up the change in the chemical conception of the proteids and the selection of a general name for the entire group of albuminous compounds. The term "proteid," used in England, is restricted to a sub-group (the conjugated proteids) by the Germans; the word "albuminoid," employed by analytical chemists in England and by French physiologists in the same sense, is restricted to the heterogeneous group of which gelatin and keratin are instances, by German and English physiologists. The word "albumin" is very generally bestowed on a sub-group, and its adoption as a family name would make worse the present confusion. After much deliberation "protein" was recommended as a general name, and the following sub-classes were suggested:

1. Protamines.
2. Histones.
3. Albumins.
4. Globulins.
5. Scleroproteins.
6. Phosphoproteins.
7. Conjugated Proteins.
   (a) Gluco-proteins (for example, mucin.)
   (b) Nucleo-proteins.
   (c) Chromo-proteins (for example, hemoglobin.)

For classes 3 and 4 no general term has been found which will prove acceptable, "heat-coagulable proteins" and "albugin" were suggested, but universally disapproved. The committee also recommended that the products of protein hydrolysis be classified as follows:

1. Infra-proteins, to replace albuminates, the termination of which implies a salt and so is objectionable.
2. Proteoses, which include albumose, globulose, gelatose, etc.
3. Peptones. It was proposed that this should be restricted to those further products of hydrolysis, which cannot be salted out from solution, but which nevertheless, still give the biuret reaction.
4. Polypeptides. These substances are still lower down; not as a rule, giving the biuret reaction, but their exact relations to peptones is still undetermined.

Transplantation of Blood Vessels and Organs.

DR. ALEXIS CARREL explained his experiments in the transplantation of blood vessels and organs in animals and presented two dogs and two cats in which he had transplanted kidneys belonging to other animals, sacrificed in the interests of science. Dr. Carrel said that he had already succeeded in having dogs live 17 days after the operation. He had also experimented by cutting off limbs of cats and guinea-pigs, and replacing them, the animals doing well afterward. Experiments have not, thus far, been made in transplanting organs on the human subject.

(To be continued.)

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA

Fifty-sixth Annual Meeting, held in Bedford Springs Sept. 10-13, 1906.

The President, DR. WILLIAM H. HARTZELL, Allentown, in the Chair.

(Continued from page 947.)

Address of Welcome.

DR. W. P. S. HENRY, Everett, president of the Bedford County Medical Society, urged on the members the importance of organization, and stated that medicine and surgery maintain their position in the front rank mainly because of the disposition of the members of the profession to congregate in their work.

Address of President.

DR. WILLIAM H. HARTZELL, Allentown, stated that when the society last met at Bedford Springs, 19 years ago, the membership was 800, whereas now it is over 4,500, which increase he attributed to the increased feeling of unity among the profession. He urged the necessity for further enlightenment of the public in hygiene and sanitation, because thereby the mortality from many diseases, such as typhoid and tuberculosis, will be decreased. He pointed out the necessity for the correction of the dispensary abuse, and condemned contract practice for lodges, etc. He also reviewed the advances made in the various domains of medicine, particularly in surgery and laboratory diagnosis.

Treatment of Inebriates and Dipsomaniacs.

DR. THEODORE DILLER, Pittsburg, commented on the Act of Assembly of April 9, 1903, providing for the commitment and detention of inebriates and drug habitués, and stated that in order to make the act effective there is needed a hospital or asylum for commitment. He described in detail various state hospitals, particularly those in Iowa and Massachusetts. He believes that the lack of such a hospital is the means of causing many inebriates, etc., to become inmates of quick institutions.

DISCUSSION.

DR. JOHN B. CARRELL, Hatboro, stated that he had communicated with various authorities on this subject, and the consensus of opinion seemed to be that a separate institution is necessary. The opinion as to permanent cures varies widely, ranging from 1 or 2 to 75 or 80 per cent., and that the most common etiologic factor is an unstable nervous system produced through heredity and wrong notions of sociability.

DR. LOWELL M. GATES, Scranton, believed that a comparatively short time, a few weeks or months, is necessary to cure these cases, provided they would not afterward be subjected to temptation. The best results would be obtained by the enactment of prohibitory laws in this direction.

DR. CHARLES K. MILLS, Philadelphia, stated that a separate institution should be established, and that the predisposing cause to inebriety is the hereditary condition of the inebriate and his family.

DR. CHARLES W. BURR, Philadelphia, recited the provisions and practice under the Pennsylvania law for the commitment of the inebriate, referring particularly to the fact that no provision is made for those who can not afford to pay. He does not feel, however, that separate institutions are absolutely necessary, but that the inebriate can be treated successfully in the insane hospitals under proper regulations. Only a few of the cases can be cured, some being of such a character that a radical cure is not possible.

DR. FREMONT W. FRANKHAUSER, Reading, felt that more good would be accomplished by prophylactic measures, preventing the acquirement of the habit, than by curative procedures.

DR. HENRY BEATES, JR., Philadelphia, stated that in these conditions the patient, having as a foundation an unstable nervous system, is the victim of an emotional state, and what is needed for the cure is compulsory restraint, and the education of the nervous system so that it can resist temptation.

SECTION ON SURGERY.

Address in Surgery.

DR. WILLIAM L. ESTES, South Bethlehem, chairman of this section, considered, particularly, the preventability and cure of syphilis and carcinoma, the first being accomplished by educating the public in the doctrines of cleanliness and sterilization and the amenability to treatment of venereal diseases in their early stages; the education of pupils in the higher schools along the lines of sociology; the requirement of aseptic practices in barber shops and other public places; the latter by the education of the physician to the necessity of prompt diagnosis and early radical removal.

Advances in Surgery of the Nervous System.

DR. THEODORE H. WEISENBURG, Philadelphia, urged the necessity for the surgeon knowing more of the anatomy of the nervous system, and stated that exploratory operation for the relief of intracranial pressure, headache, etc., is justified as a palliative measure, even if radical removal of the causative factor is not possible.

SYMPOSIUM: SURGERY OF THE HEAD AND SPINE.

Cranial Injuries.

DR. DANIEL A. WEBB, Scranton, considered late cerebellar abscesses of traumatic origin, and after referring to the literature of the subject, particularly the diagnosis and the relation of trauma to the abscess, stated that the only treatment for the condition is operative. He reported the case of a miner, 29 years of age, who six years previously had suffered a cranial injury by a fall of coal. When admitted to the hospital he was suffering from headache and difficulty in articulation. The case was diagnosed as one of cerebellar tumor, but after death it was discovered to be a deep-seated abscess of the middle lobe.

Fracture of Base of Skull Resulting from Direct Violence Through Inferior Maxilla.

DR. ALEXANDER G. FELL, Wilkes-Barre, cited the case of a man, aged 25, who during a fire fell from a porch, a distance of 20 feet, striking on the point of the inferior maxilla, causing a complete, compound, comminuted fracture between the median line and the left mental foramen.

Present Status of Cranial Surgery.

DR. CHARLES H. FRAZIER, Philadelphia, reviewed the general progress made during the past decade, and considered particularly the surgery of epilepsy; of hemorrhage of the newborn and in childhood; of the cranial nerves; of tumors, and urged that if operation was to be done at all, it should be performed early.

Unusual Case of Trauma of Head, Exhibiting Symptoms of Astereognosis.

DRS. JOHN H. W. RHEIN and EDWARD MARTIN, Philadelphia, reported this case, which followed an attack of acute otitis media. After cleaning out the cavity and washing it with pure carbolic acid (which was afterward neutralized with alcohol), the man made a good recovery.

Impaired Cerebral Development Due to Other Than Cranial Causes.

DR. ERNEST LAPLACE, Philadelphia, mentioned adenoids, tongue-tie and phimosis, which conditions, he said, should be corrected as promptly as possible where no brain lesion is found. Eighty-two cases which have come under his care resulted very satisfactorily.

DISCUSSION.

DR. CHARLES K. MILLS, Philadelphia, stated that headache is a more valuable diagnostic symptom in brain abscess than in tumor. Operation for brain tumor should be performed so soon as there are sufficient symptoms to diagnose the case.

DR. CHARLES W. BURR, Philadelphia, urged the importance of earlier diagnosis and more prompt surgical interference in cases of brain tumor.

DR. WILLIAM G. SPILLER, Philadelphia, urged the importance of differentiation as to location of the lesion, whether cortical or subcortical. He also recommended the removal of a portion of the bone in cases of enlargement of the bones of the skull, and reported two cases, one a syphilitic tumor and the other a tumor following an injury in which each patient made a good recovery.

DR. LEVI J. HAMMOND, Philadelphia, felt that those cases with a history of suppurating middle ear, loss of flesh, lowering of pulse and disturbance between relation of pulse and temperature strongly suggest cerebellar tumors.

DR. WILLIAM L. RODMAN, Philadelphia, reported the case of a man suffering from constant vomiting, which had been diagnosed by the local physicians as a diseased condition of the stomach, but which after death proved to be an extensive tumor of the right half of the cerebellum. He believes that in most cases the peripheral operation is to be preferred to the more general one.

DR. GEORGE W. GUTHRIE, Wilkes-Barre, stated that he had almost invariably secured good results in the treatment of traumatic injuries of the brain, while the contrary had been almost as uniformly the case in traumatic injuries of the spinal cord.

SECTION ON EYE, EAR, NOSE AND THROAT DISEASES.

Chairman's Address.

DR. SAMUEL D. RISLEY, Philadelphia, said that the society had taken an important step toward the fulfillment of its ideals, for the advancement of scientific medicine, by providing for the classification and division of its work by creating sections. Formerly only such subjects as are of general interest were presented. When special subjects were introduced it had the effect of driving out of the room those of the auditors not interested in the particular organ under consideration. Therefore, members working in special fields would seek other avenues than the state society for the presentation of their results. Dr. Risley advocated that a change should be made in the rule that compels the sole publication of papers in the journal of the society, as he thought that it prevents the presentation before that body of fresh or original work, the publication of which might be deferred for an entire year. He also made a plea for physicians not to become exclusively interested in their specialties, but to keep up with the advances in general medicine and surgery; and also not to be ignorant or indifferent to the specific affections of other organs than the one selected for the special field of endeavor. The general practitioner also can not afford to ignore the increase of knowledge to be gained by attendance on the work of the section on specialties.

Local Infection from the Conjunctiva and the Lachrymal Passages.

DR. EDWARD A. SHUMWAY, Philadelphia, said that infection after operation is now known to depend on the presence of micro-organisms within the conjunctival sac. The bacteria that are normally present there are greatly increased in number by inflammation of the conjunctiva and the lachrymal passages. Infections of the eyeball fall into two classes: those that involve the cornea in the form of ulcers, and those that involve the entire ball. Ulcers of the cornea are produced by a great variety of organisms. Infection, in the majority of cases, presupposes an injury to the corneal epithelium. Infection of the globe may result from the perforation of ulcers, or may follow penetrating injuries or operation during which the eyeball is opened. It is probably not possible for bacteria to pass upward from the nasal chambers through the lachrymal passages to the eye; but, in the presence of a stricture of the duct, the sac forms an excellent breeding ground for the organisms, and these readily overflow on the conjunctiva. The treatment of even minor injuries is, therefore, of considerable importance. Dr. Shumway described the treatment fully.

(To be continued.)

Travel Notes

DISEASE AND HOSPITALS OF THE INTERIOR OF SOUTH AFRICA.

NICHOLAS SENN, M.D.,
Professor of Surgery in the University of Chicago and Professor and Head of the Surgical Department of Rush Medical College.
CHICAGO.

(*Continued from page 962.*)

SANITATION IN JOHANNESBURG—DISEASES OF CENTRAL SOUTH AFRICA.

The great diamond mines of Kimberley and the richest gold mines in the world at Johannesburg are only fifteen hours apart by rail. Nature has deposited here within this limited space her richest treasures in the very heart of what was but a few years ago the Dark Continent. These mining cities are situated on the highest elevation of the interior plateau of South Africa, and the diseases prevailing here are representative of the diseases of that part of Africa. Thanks to Dr. Charles Porter, the health officer of Johannesburg, I was given every facility to get a good insight into this subject, besides familiarizing myself with sanitary matters in the city of Johannesburg. The city has about 210,000 inhabitants, 80,000 whites, the same number of negroes, and 50,000 Chinese. Dr. Porter is the busiest man in the city. He has made sanitation his specialty since his graduation in medicine. For several years he was health officer of an important city in England, and came here to take the position at a salary of $10,000 per year, and with the understanding that his work should not be hampered by politics. He is the most enthusiastic and energetic health officer I have ever met. He works without a let-up from morning until night. I spent a whole forenoon with him in visiting his various establishments, destructor, sewage compound, lazaretto and isolation hospital, scattered over a considerable part of the outskirts of the city, and I became deeply impressed with his knowledge of sanitation and the efficiency of his work. A large disinfection plant with the most improved sterilizers is in operation in connection with the lazaretto. The destructor, where all garbage is cremated, was of special interest to me. Part of the ashes from the destructor entered into the composition of an artificial stone used for paving sidewalks and sewer pipes, both of which are manufactured on the premises, and are a source of considerable income to the city. The sewage is collected in carts by a small army of blacks who live in a compound adjacent to the disinfecting station. From a common point, the sewage is conveyed to a safe distance from the city and tipped into abandoned mines or other available places. Dr. Porter's next great project will be the building of a model abattoir, for which he has already selected the site and material and drawn the plans. He is paid a large salary, but it is well invested for the improvement and health of the city.

In his annual report for the year 1903, an admirable publication, he has this to say of the causes and prevalence of pneumonia: "It is, however, generally agreed that pneumonia is an infectious disease and that it is predisposed to by devitalizing influences of any kind, such as irregularities and excesses of life, insanitary environment, overcrowding and air pollution, as well as by inferior and insufficient food, and neglect of precaution against the sudden changes of temperature characteristic of the South African climate. Furthermore, there can be little doubt that the very great amount of dust with which Johannesburg is liable to be afflicted in the dry season, has had a very considerable share in the production of the disease, and this view is confirmed by the fact that dust taken in May in Market Street and Fox Street has been shown to be as sharp, angular and irritating as that taken from the mine slopes. Finally, as the 'spit' of pneumonia patients swarms with the germs of the disease, there is little doubt that the disgusting habit of spitting, especially inside dwellings, bars and public vehicles, is an appreciable factor in spreading the disease." In the mortality statistics for that year, diarrhea and dysentery are credited with 157 deaths, including 108 children under 1 year of age; pneumonia with 115, and "Rock drill pneumonia," or miner's phthisis, with 52. There can be no question as to the direct etiologic relationship of street and mine dust to bronchitis, pneumonia and tuberculosis, at least as a predisposing cause, by preparing by their mechanical irritation, a point of least resistance in which the essential microbic cause, pus microbes, pneumococci and the bacilli of tuberculosis locate, multiply and exercise their specific pathogenic effects, producing the characteristic type of inflammation. The health reports in Johannesburg, published in excellent form by Dr. Porter, are interesting in showing the kind of diseases physicians have to deal with on the high mountain plateau of South Africa.

The water supply of Johannesburg is obtained from wells 60 to 90 feet deep, drilled in the solid rock, and yielding an abundance of pure potable water. During one of the outbreaks of typhoid fever, Dr. Porter traced the infection to one of the wells, which had become contaminated through a fissure in a rock which led into the well. There are other sources of typhoid infection in the city; the removal of night soil in carts, the dust and the ignorance of the natives regarding matters of health, have contributed their share in propagating the disease, in a place supplied with water, usually free from typhoid germs. Through the energetic influence of the officer of health, a hotbed of disease was removed from the very center of the city, where a large settlement of blacks lived in filthy crowded huts. By prompt action of the city council, the recommendation of Dr. Porter to condemn the huts, remunerate the natives for their loss and colonize them outside of the city limits, was adopted and carried out, and the cleared space has now become a desirable place for private residences and business establishments, and the natives have been likewise benefited by the change.

During the year 795 cases of typhoid fever were reported to the health office, 710 whites and 85 blacks. Of the white patients, 206 were persons who either came into Johannesburg suffering from the disease, or developed it in two or three days after arrival. The total case mortality for the whites was about 13.8 per cent., while for the blacks it was 56.5 per cent., but the total number of blacks attacked (85) is hardly large enough to allow any safe conclusion to be drawn. The excessively high mortality among the blacks was, in all probability, due to the fact that only grave cases were seen by physicians, as well as improper diet and lack of nursing.

A glance at the tables giving an account of infectious diseases reported during the year, gives a good idea of the prevalence of these diseases, not only in Johannesburg, but all over the central part of South Africa and Cape Colony. The whole number of cases reported was 1,775. Among these I will give the figures of the more important diseases only: Typhoid fever, 795; gastric and typho-malarial fever, 5; malaria, 56; scarlet fever, 220; chickenpox, 155; puerperal fever and puerperal sepsis, 20; dysentery, 402; diphtheria, 66; membranous croup, 7, and erysipelas, 48. In this list two cases of leprosy are included. These figures show conclusively that the high plateau region of South Africa is almost free from tropical diseases, and that its healthfulness compares favorably with that of any other country. The climate is delightful, the air dry and bracing, the nights cool, and the day heat, even in midsummer, not distressing.

JOHANNESBURG HOSPITAL.

Johannesburg Hospital is the only general hospital in the city. A small hospital for the employés of the Rhodesia Railroad I did not visit. The Johannesburg Hospital is eighteen years old, has undergone many important changes since that time, and has been enlarged with the growing needs for accommodations for the increasing number of ill and injured. The hospital occupies a commanding position on one of the many hills of the city, and is surrounded by large grounds made attractive by paths, trees, shrubs and flowers. The hospital at present has accommodations for 380 patients. A large number of private rooms and a few small private wards are a source of material revenue with which to defray the heavy expenses of the institution. The main building and wings are two stories high and constructed of brick. The blacks are housed in two one-story cottages in the rear. In the ward

for black women I counted only 13 patients. The number of black male patients in another ward was much larger.

I was much pleased to find a free bed in one of the general wards for Europeans in memory of the late President Kruger, established and to be maintained by friends of the deceased. The report of the hospital for the last year makes the following allusion to this: "As a memorial to the late President Kruger, about $1,000 was collected by several lady residents of the town and handed over to the board for the purpose of maintaining a bed in the free male wards. The board's thanks having been conveyed to the organizers, the bed was formally opened by General Beyers in the presence of the hospital board and staff, Dec. 21, 1904, and a brass plate giving the designation of the bed placed at its head."

Mr. G. E. Murray, F.R.C.S., does most of the operating and, so far as I could learn, is the most prominent surgeon in the city. We found him in the capacious operating room, which is well lighted and fairly well equipped, engaged in an operation for femoral hernia. His principal assistant was one of the sisters of the hospital, who has charge of the operating room. Mr. Murray used iodized catgut exclusively for buried sutures and ligatures, and is well pleased with the results, as since he has adopted this material, stitch abscesses in aseptic wounds are almost unknown. A few cases of cancer in the black have been observed in this hospital, but no cases of appendicitis.

It is a little strange, that in this city with more than 100 doctors, the hospital has not opened its doors so freely as it should to physicians who do not belong to the staff. A movement is now on foot to remedy this lack of hospital space by the building of another hospital for the outsiders, and this is certainly an effort in the right direction. The nursing is in care of 25 Anglican Sisters and 80 pupil nurses. A new nurses' home is on the way to completion at an expense of more than $100,000. The nurses have to undergo a course of instruction and training extending over three years before they can come up for the final examination. Graduate nurses in private practice are paid $25 a week. This liberal pay of private nurses is a great incentive for young women to enter the training school. The annual report of the hospital for 1905 shows that the whole number of indoor and outdoor patients, paying and free, was 12,398, of which 7,919 were outdoor patients. Of the 4,459 indoor patients, 3,256 were whites and 1,203 colored, and of these, 1,915 paid full hospital fees, 74 partial fees and 2,470 were treated free of charge. The average percentage of white-paying patients was 44, and of colored 44, certainly a good showing for the latter.

The government grant in aid for the year amounted to $75,000. I will omit reference to the medical statistics of the hospital, as it would be largely a repetition of what I have quoted from the report of the officer of health, Dr. Porter. A few notes from the surgical statistics will be of interest. Of 18 cases of attempted suicide, all Europeans, 7 died; of 253 cases of fractures of all kinds, the injury or its complications proved fatal in 25; out of 5 cases of intestinal obstruction, all white patients, only one died. Hernia appears with 40 cases, with 3 deaths, and strangulated hernia with 9 cases and 2 deaths. Appendicitis is credited with 52 cases, and of these patients 4 died. Pelvic surgery takes a conspicuous position in the surgical statistics and is headed by salpingitis with 26 cases in the white and only 2 in the black, with 2 deaths. Vesicovaginal fistula occurred five times. Among the rare operations, we noted one for pancreatic cyst and one for exstrophy of the bladder. Nowhere in Africa does stone in the bladder or kidney appear to be common. In this list we find only 2 cases of stone in the bladder and none of stone of the kidney. Of 25 cases of stricture of the urethra, only 2 were in colored patients. It is a very noteworthy fact that all cases of congenital and acquired deformity were white patients. These cases were 6 of harelip and cleft palate, 1 of spina bifida, 5 of clubfoot 2 of hammertoe and 1 hypospadias. The surgical statistics cover almost the entire field of surgery, and the results certainly speak well for the operators of Johannesburg.

(To be continued.)

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen in every-day practice.]

Intestinal Dyspepsia—A Correction.

In THE JOURNAL, Sept. 22, 1906, page 964, second column, near the bottom, the word *salve* appears in place of *salol*. Although the procedure would be harmless, we trust that none of our readers have made internal application of the external remedy inadvertently suggested. The prescription should read:

For putrefactive diarrhea with abdominal pain:

℞.	Bismuthi subgal.	3ii	8 |
	Salol	gr. xxiv	1 |65
	Ext. opii (denarcotized)	gr. iii	|20

M. Ft. capsulæ No. xii. Sig.: One capsule before meals.

Tertiary Syphilis.

In the treatment of the tertiary stage of syphilis J. C. Wilson, in *Applied Therapeutics*, states that the iodids are of more benefit than the mercurials. Unless the mercurials are administered with the iodids, however, the patient will in most cases suffer a relapse. The quickest and most positive results are, as a rule, obtained by combining the two, which produces a combined effect on the syphilitic virus that is not obtained by one of these preparations when given alone. The administration of the iodid, according to Wilson, hinders the elimination of the mercury by the kidney, so that a longer time is required for the process, as the mercury remains stored in the tissues and prevents relapses.

A course of potassium iodid should not be continued too long, and if improvement is not shown by its administration by the end of six weeks or two months, some other treatment should be instituted. Whether the iodids should be combined with the mercury or given separately, as well as the size of the dose to be given, should be governed by the character of the lesions, their extent and the part of the body involved. If the patient should be suffering from the skin eruptions of late syphilis, the mercury and iodids should be combined, and iron should be added if anemia is present. The author recommends the following combinations:

℞.	Hydrarg. chloridi corros.	gr. i	|06
	Kaiii iodidi	3ii	8 |
	Syr. ferri iodidi	f3iv	15 |
	Syr. sarsap. comp.	f3iii	90 |
	Aquæ q. s. ad.	f3vi	180 |

M. Sig.: One tablespoonful three times a day after meals, in water.

Mercuric iodid may be substituted for the corrosive sublimate as follows:

℞.	Hydrarg. iodidi rubri	gr. iii	|20
	Potassii iodidi	3ii	8 |
	Syr. sarsaparillæ co.	f3iii	90 |
	Aquæ q. s. ad.	f3vi	180 |

M. Sig.: One tablespoonful in water three times a day.

When a tonic is indicated in conjunction with the specific treatment, Wilson recommends the following combination:

℞.	Hydrarg. chloridi corros.	gr. i	|06
	Tinct. ferri chloridi	f3ii	8 |
	Liq. arsenii chloridi	gtt. xlviii	3 |20
	Potassii iodidi	3ii	8 |
	Syr. zingiberis	f3iii	90 |
	Aquæ q. s.	f3vi	180 |

M. Sig.: One tablespoonful three times a day, in water.

Patients who suffer from pain in the bones, constant headache or syphilitic disease of the nervous system, may be given by preference, potassium iodid in doses of 20 to 60 grains (1.30 to 4.00) three times a day, beginning with small doses and gradually increasing the dose. In cases of gumma of the skin or subcutaneous tissue, corrosive sublimate should be given hypodermically and at the same time potassium iodid should be given internally in doses of 20 grains each (1.30)

The best local application under these conditions when ulceration has not taken place, is the blue ointment, with gentle

pressure made by means of a bandage properly applied. If ulceration should take place the author recommends the following ointment:

R. Cerati resinæ co.		
Ung. iodoformi, āā	3ii	8
Balsami Peru	3i	4
Unguenti petrolati q. s. ad	3i	30

M. Ft. unguentum. Sig.: Apply locally.

Affections of the mucous membranes should be treated locally precisely as in the secondary period. If deep ulceration exists the iodids should be given in large doses. The proper care must be taken to keep the ulcer clean, and for this purpose he recommends Dobell's solution, followed by a local application of silver nitrate and this followed by a spray, as follows:

R. Thymol	gr. iss	09
Menthol		
Camphoræ, āā	gr. v	30
Liq. petrolati	f3i 30	

M. Sig.: To be used as a spray in the atomizer.

Benefit is derived from touching the ulcers with the tincture of iodin and the use of a gargle of the infusion of marshmallow. When the tertiary syphilis affects the tendons or their sheaths prolonged treatment is necessary. Locally the tincture of iodin is recommended, followed later by the following ointment:

R. Ichthyoli	gr. viii	50
Unguenti hydrargi		
Unguenti belladonnæ, āā	3iii	12
Unguenti petrolati	3ii	8

M. Ft. unguentum. Sig.: Apply locally.

Syphilis involving the brain, spinal cord and special nerves, mercury and the iodid should both be employed, combined with suitable tonics.

To aid digestion and promote constructive metamorphosis, Wilson recommends the following pill:

R. Acidi arsenosi		
Strych. sulphatis		
Auri et sodii chloridi, āā	gr. i	06
Pepsini	gr. xl	2 65

M. Ft. pil. No. xx. Sig.: One after each meal.

The gold and strychnia should be continued for not less than six months. Iron should be added, if necessary.

In the treatment of hereditary syphilis, according to some authorities, the treatment should not be started until symptoms manifest themselves. Others state that a healthy child of a syphilitic father requires no treatment; if the mother was previously syphilitic, but has been free from all symptoms during the period of pregnancy, the child requires no treatment, but if the mother has recently been syphilitic, especially if symptoms of syphilis have been present during pregnancy, the child should receive treatment without delay. Wilson recommends the mercurial inunction as the best and most reliable treatment. Two drams (8.00) of the ointment may be spread on a piece of muslin or lint and applied to the child's body as a belly-band. This band should reach from the axilla to the groin and allowed to remain in place for three days, when it should be removed and the child's body gently washed with soap and water, followed by another application of the ointment. In this way trouble rarely arises. He speaks of mercury with chalk as a good preparation, given in doses of grain 1/12 each (.005), three times a day, by dropping it on the infant's tongue.

Corrosive sublimate in doses of grain 1/150 each (.0004) is also recommended, but is as a rule too irritating to the intestinal canal to be used for any length of time. The tannate of mercury is frequently of service, and this preparation is, as a rule, well borne by children, administered in milk. If marked tertiary symptoms arise, potassium iodid should be given in doses of from grain ½ (.03) to grain 1 (.06), in conjunction with the mercury.

Taylor and Bumstead recommend the following combination:

R. Hydrarg. iodidi rubri	gr. i	06
Potassii iodidi	3iv	15
Syr. sarsap. comp.		
Aquæ, āā	f3ii	60

M. Sig.: Five drops morning and evening for a child one month old, increasing the dose one drop every five days. If the child is over 5 years of age, one teaspoonful may be given three times a day.

Spartein.

In an abstract in the *Ohio State Med. Jour.*, Petty states that disappointment in the results obtained from the administration of spartein is due to the insufficient dosage. Most authorities recommend doses of grain 1/6 to 1/3 (.01 to .02) each. He states that the dose hypodermically should be 1½ grains (.09) and not less than 2 grains (.12) by the mouth can be relied on. Like quinin, it is regarded by Petty as non-toxic, and also its effects are definite. He regards it as the ideal heart tonic, decreasing the frequency and increasing the force of the heart's action like digitalis, but at the same time it relieves the burden of the heart by reducing the arterial tension through dilatation of the superficial and deep capillaries. It thus acts as a very efficient diuretic. Its effect lasts for six to twelve hours after administration. He recommends it in the treatment of irregular heart action, given in 2-grain doses (.12) by the mouth and repeated once in two or three hours, and then not oftener than once in four to six hours. In considering its action as a dilator of arterioles and as a heart tonic, thus allowing more oxygen in the lungs and in producing diuresis, Petty regards this preparation as of great service in cardiac failure of pneumonia.

Incompatibilities of Some of the Newer Remedies.

In the report of the committee on newer remedies of the New York State Pharmaceutical Association, according to the *Pharm. Record*, the task of avoiding incompatibilities in the use of the newer remedies of synthetic origin is becoming greater with the increasing number of these preparations. In this connection it is stated that a great many physicians are inclined to prescribe a large number of these preparations in wafers. Many of these preparations are unsuitable for prescribing in wafer form because they attract moisture, which softens the wafers. Among these are mentioned sodium bromid, calcium chlorid, strontium chlorid, chloral, the glycerophosphates, piperazin and the dry vegetable extracts. Iodids should not be prescribed in wafer form, as they decompose or change color.

The fact is also mentioned that many solid preparations when combined produce a liquid, as, for instance, camphor combined with naphthol makes a liquid.

Antipyrin and sodium salicylate when combined give rise to a semi-liquid substance. Antipyrin when combined with chloral gives rise to an oily liquid and similarly when combined with betanaphthol, salol, resorcin, phenol, pyrogallol, thymol or urethane.

Acetanilid is incompatible with chloral, thymol, resorcin or menthol.

Betanaphthol is incompatible with antipyrin, camphor, menthol, phenol or urethane.

Camphor monobromid is incompatible with chloral, phenol, salol and thymol. Camphor should not be combined with betanaphthol, chloral, phenol, pyrogallol, resorcin, salol, thymol or urethane.

Chloral is not compatible with acetanilid, camphor, camphor bromid, menthol phenacetin, phenol, salol, thymol or urethane.

Menthol can not be mixed with naphthol, pyrogallol, resorcin, salol, thymol or urethane.

Sodium salicylate should never be combined with antipyrin and phenol.

Phenacetin is incompatible with naphthol, chloral and phenol. While phenol decomposes antipyrin, naphthol, camphor, chloral, menthol, sodium salicylate, pyrogallol, resorcin, salol, thymol and urethane.

Pyrogallol is incompatible with antipyrin, camphor, menthol and phenol.

Resorcin, according to these reports, forms new compounds with acetanilid, camphor monobromid, naphthol, menthol, phenol and urethane.

Salol shows some chemical change with antipyrin, camphor, camphor bromid, chloral, phenacetin, pyrogallol and thymol.

Thymol is incompatible with acetanilid, antipyrin and cam-

phor; also with chloral, menthol, phenol, salol and urethane.

Urethane shows changes with antipyrin, naphthol, camphor, chloral, phenol, pyrogallol, resorcin, salicylic acid, salol and thymol.

The report also speaks of the great care necessary in preparing mixtures of syrups containing acacia with certain phenol derivatives, as incompatibilities are liable to occur as the result of the presence of an oxidizing ferment in the gum, which may produce chemical changes by producing either a precipitation or at least a change in color as syrup of acacia gives a blue color to the resin of guaiac; a somewhat pinkish color with phenol, a grayish color with betanaphthol, a yellowish-brown color with pyrocatechin; and a deposit of crystals of oxymorphin with morphin hydrochlorid.

Syrup of acacia, it must be remembered, is also incompatible with eserin, adrenalin, syrup of tar and liquid preparations of aloes.

Medicolegal

Admissible Evidence as to Value of Physician's Services.

The Supreme Court of Colorado says that but one question was presented for determination in the case of Sills vs. Cochems: Is testimony tending to show that plaintiff was busily engaged in the practice of his profession admissible in an action brought by a physician to recover judgment for the value of professional services rendered, where the price to be charged for such services was not agreed on?

It is said that "when an attorney sues on a quantum meruit (as much as he deserved) for professional services, his professional standing is a proper subject of inquiry as affecting the value of his services. And the amount of his professional business may be inquired into, as tending to show his professional standing." Weeks on Attorneys at Law, 681; Phelps vs. Hunt, 40 Conn., 97. Counsel called the court's attention to no case, and it knows of none, wherein it is held that a different rule should obtain in determining the value of a physician's services. The same reasoning which prompts the doctrine as to attorneys seems to warrant its application to physicians.

The value of professional services may depend very considerably on the character and standing of him who performs them. In the first place there are diversities of gifts. The period of time passed in the profession, the experience acquired, degree of skill and the faculty of using professional knowledge make great differences in individuals. The services of some are worth more than the services of others, because they will command more. Should a question arise as to the value of services, in an action brought by a physician to recover fees, where the nature of the services performed makes the possession of certain qualifications to constitute an important element in the value of those services, as in this case where the plaintiff was called because of his peculiar skill as a diagnostician, evidence of professional standing is clearly admissible and is entitled to consideration.

The fact that the plaintiff was extremely busy tended to show his professional standing, and tended to show, in connection with other testimony concerning the length of time he had practiced medicine in that community, his experience, which gave him the requisite knowledge and ability to properly diagnose and prescribe the necessary medicines for diseased persons. If constant practice in the art of his profession renders a practitioner more capable than he otherwise would be, the extent of such a practice is a matter which may be properly inquired into for the purpose of determining the value of the services rendered.

Duty of Injured Person as to Employing Physician.

The Court of Civil Appeals of Texas says, in St. Louis Southwestern Railway Co. vs. Johnson, a personal injury case brought by the latter party, that the jury was instructed to the effect that it was the duty of the plaintiff to exercise that degree of care that an ordinarily prudent person would have exercised under the same or similar circumstances to employ a physician or physicians, and to secure proper treatment for his injuries, and that if he failed in this respect and his injuries were thereby increased that he could not recover for such increased injuries. This charge announced a correct proposition of law.

May Contract Against Future Professional Competition.

The Supreme Court of Tennessee says, in the case of Turner vs. Abbott, that its examination of the authorities has not confirmed the suggestion of counsel that a contract inhibiting future professional competition is not valid, unless at the time the party inhibited has an established practice or professional good will or a mercantile business which may be made the subject of sale. On the contrary, the court finds numerous cases, English and American, where a clerk or employé, teacher or salesman, on entering the service of a tradesman, manufacturer, or professional man, has been bound by a lawful contract not to engage in a competitive business with his employer. In the present case, the defendant was paid for his services as an assistant dentist, at a salary of $100 per month, which was large compensation to a young man who had just graduated, and under the authorities it was perfectly competent for the parties to make a contract that he would not open an office or practice dentistry in competition with the complainant when he ceased to work for the complainant in the town where the latter then was located and its immediate vicinity. The court thinks that this contract was reasonable and not oppressive; nor was it in any way detrimental to the interests of the public. In other words, it holds that such a contract is not in unlawful restraint of trade or against public policy, but is valid and enforceable. It says, besides what is above stated, that the general rule on this subject, deducible from the authorities, is that a contract in general restraint of trade, that is, not to engage in one's trade or profession at any place in the realm, is void as being contrary to public policy; but a contract not to engage in one's business or profession at a particular place, or for a period of time, is not invalid as being contrary to public policy, but such contracts will be upheld and enforced. And in this case the court affirms a decree restraining the defendant from the practice of dentistry in the town in question or its vicinity, in violation of the contract above mentioned.

Death of Minor from Anesthetic Administered for Operation Without Father's Consent.

The Supreme Court of Michigan says that the case of Bakker vs. Welsh and another was brought by a father, after being appointed administrator of the estate of his son who had died on an operating table at a hospital while chloroform was being administered preparatory to the removal of a tumor on his left ear about the size of a dove's egg. The claim was stated to be under what is known by the lawyers and the courts as the "Death Act." The son was 17 years old, and lived with his father on a farm. The record, instead of disclosing want of skill in the operation, showed quite the contrary. The principal point, therefore, presented was: Were the defendants liable in this action because they engaged in this operation without obtaining the consent of the father?

Counsel for the plaintiff were very frank with the court, it says, and stated in brief: "We are unable to aid the court by reference to any decisions in point. We have devoted much time and research to this interesting question, but have been unable to find any decisions of a higher court either supporting or opposing the plaintiff's contention, and we will therefore have to be content by calling the court's attention to such general reasoning as leads us to take the view herein contended for." They then argued at length and with a good deal of force that, as the father is the natural guardian of the child and is entitled to his custody and his services, he can not be deprived of them without his consent. "We contend," they said, "that it is wrong in every sense, except in cases of emergency, for a physician and surgeon to enter on a dangerous operation, or, as in this case, the administration of an anesthetic, conceded to be always accompanied with danger that death may result, without the knowledge and consent of the parent or guardian. It is against public policy and the sacred rights we have in our children that surgeons

should take them in charge without our knowledge and send to us a corpse as the first notice or intimation of their relation to the case."

On the part of the defendants it was contended: (1) Consent of the father was unnecessary. (2) The lack of consent was not the cause of the boy's death, hence not actionable. (3) That if it were, the action did not survive under the death act. (4) That the action, if any, was in the father, not in the administrator. But the court does not think it necessary to a disposition of the case to decide all of the defenses interposed by the defendants.

The record, the court says, showed a young fellow almost grown into manhood, who has been for a considerable period of time, while living with his father, afflicted with a tumor. He has attempted, while at home, to have it removed by absorption. It does disappear, but after a time it reappears. He goes up to a large city, and with an aunt and two sisters, all adults, submits to examination, receives some advice, and goes back to his father with an agreement to return later to receive the report of the expert who is to make the microscopic examination. He returns accordingly, and with at least some of his adult relatives arranges to have a surgical operation of a not very dangerous character performed. Preparations are made for its performance. There is nothing in the record to indicate that, if the consent of father had been asked, it would not have been freely given. There is nothing in the record to indicate to the physicians, before entering on the operation, that the father did not approve of his son's going with his aunt and adult sisters, and consulting a physician as to his ailment, and following his advice. The court thinks it would be altogether too harsh a rule to say that under the circumstances disclosed by this record, in a suit under the statute declared on, the defendants should be held liable because they did not obtain the consent of the father to the administration of the anesthetic. Judgment for the defendants affirmed.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below:

Boston Medical and Surgical Journal.

September 13.

1 Chemistry of the Bacterial Cell and a Study of the Effects of Some of the Split Products on Animals. V. C. Vaughan, Ann Arbor.
2 *Artificial Nauheim Baths in Chronic Heart Cases. P. K. Brown, San Francisco.
3 Systemic Infection Through the Tonsils. J. L. Goodale, Boston.
4 Problems of Venereal Prophylaxis: Remedial Suggestions Relating to It. A. L. Wolbarst, New York.
5 Septic Infection Through the Fauces. G. A. Leland, Boston.

2. Artificial Nauheim Baths in Heart Disease.—The bath employed by Brown is merely a bicarbonate of soda and acid sodium sulphate bath without the chlorids. He says that the cases peculiarly fitted for Nauheim treatment are those in which the heart muscle acts insufficiently, either from dilatation, poor blood supply or arteriosclerosis with changes in the muscle; poisoning, notably tobacco poisoning, and fatty changes of moderate degree. Brown does not believe that the use of resisted movements with the Nauheim baths is essential. They are often very tiresome to the patient and are dangerous in bad cases, unless given by a person who understands fully the purposes of them and who realizes that every case is a law in itself. In his experience Brown has found it best to give these exercises an hour or two before the bath, and when this is not possible, a number of hours after the bath. He has found massage in connection with the treatments of advantage, particularly when the temperature of the bath was below 90.

New York Medical Journal.

September 15.

6 *The Ataxic Rectum. C. F. Martin, Philadelphia.
7 Palatable Medication. H. B. Sheffield, New York.
8 Ocular Insufficiency and Some of Its Results. E. M. Alger, New York.
9 Rheumatic Cricoarytenoid Ankylosis. H. P. Moseley, New York.
10 Physical Training a Factor in Psychologic Development. M. W. Barr, Elwyn, Pa.
11 *Rational Treatment of Diabetes Mellitus. T. S. Hart, New York.
12 The Diseased Faucial Tonsil as a Causal Factor in Respiratory and Gastric Diseases. A. R. Solenberger, Colorado Springs, Colo.
13 Case of Ectopic Gestation with Bilateral Suppurative Salpingitis and Adenomyoma of the Uterus. S. E. Tracy, Philadelphia.
14 *Instillation of Carbolic Acid into the Eye from a Medicine Dropper Through Mistake. J. C. Carter, Denison, Texas.
15 The Kidney of Pregnancy. D. W. Prentiss, Washington, D. C.

6. Ataxic Rectum.—On examining a number of tabetic cases, Martin found that all showed a sensory paralysis of the external sphincter, although considerable power seemed to remain in the internal sphincter. In three cases of tabes another peculiarity was noted, which was that when the finger was withdrawn the anus did not immediately contract, but remained patulous. Martin says that inasmuch as the rectal and vesical symptoms come on early in the course of tabes, a paralyzed external sphincter, with a history of persistent constipation, should suggest to the mind of the examiner the necessity of trying the other reflexes. The addition of bladder disturbances may be considered very suggestive of some changes taking place in the spinal cord, interfering with the transmission of voluntary impulses from the brain. The disturbance of the other reflexes, such as the loss of knee jerk, poor station, and impaired papillary reflexes, will frequently clear up the diagnosis.

Martin has found that the treatment of these cases of ataxic constipation is decidedly unsatisfactory. Probably the best results can be obtained by the regular administration of mild laxatives. The patient should be encouraged to make periodic attempts at stool, and should try the effect of massage over the colon and the lower abdomen. The administration of small doses of the alkaloid of the ripe seed of the calabar bean seems to stimulate peristalsis to a certain extent. A morning dose of sodium bicarbonate seems to work well when the case is a mild one. When there is a persistent tendency toward attacks of fecal impaction the patient should take a high colonic injection of cold or cool water in the morning. This is to empty the lower bowel so as to rid the patient of the annoyance of the pressure of feces in the rectum. In addition to the care of the alimentary tract, attention should be paid to the urinary tract, and a constant lookout kept for any symptoms pointing to urinary retention or vesical paralysis.

11. Treatment of Diabetes Mellitus.—Hart defines diabetes mellitus as a disease of faulty metabolism characterized by a deficient power of oxidation resulting in the incomplete combustion of the carbohydrates and fats of the food and of the tissues. Hart protests against the belief that urine with its specific gravity of 1020 can not contain sugar. He refers to 50 instances in which the specific gravity was from 1006 to 1018 in each of which sugar had been demonstrated. All treatment instituted must be directed toward improving the powers of oxidation. It is Hart's custom to give the patient written instructions for his dietary for each meal for a week, each day cutting off a little more carbohydrate food, until on the seventh day the diet is composed of a definite quantity of fats and proteids only. The diet for this day is as follows and is termed the "standard diet:" Breakfast: 150 c.c. of coffee with two teaspoonfuls of thick, sweet cream, two poached eggs, four slices of bacon, and butter. Dinner (midday): 150 c.c. of clear bouillon; broiled fish with mayonnaise dressing; roast beef, 200 grams; spinach or asparagus, salad of lettuce and tomatoes with French dressing, cream cheese, 20 grams; butter; one small cup of black coffee. Supper: Beefsteak, 200 grams; eggs, scrambled, without flour; cup of tea; string beans, lettuce salad with French or mayonnaise dressing. For the next two days the patient continues on the standard diet to which is added an "accessory diet" of 100 grams of wheat bread equally divided between the morning and midday meal. The twenty-four hours' urine is collected and examined. If glucose is present the patient is allowed the standard diet plus a diminished accessory diet, e. g., 80 grams of wheat bread. If the glucose is absent he is given the standard diet plus an increased accessory diet, e. g., 120 grams of wheat bread. A study of the individual case is all important.

14.—A report of this case appeared in THE JOURNAL, July 7, 1906, page 37.

Medical Record, New York.

September 15.

16 *How May the Medical and Teaching Professions Co-operate to Improve the Moral, Mental, and Physical Condition of the Young? S. A. Knopf, New York.
17 *Clinical Observations Concerning the Nasal Passages and the Relation They Bear to the Organs of Sight and Hearing. A. G. Bryant, Boston.
18 *A New Axis-Traction Apparatus. A. C. Jacobson, Brooklyn, N. Y.
19 *Results from the Bloodless Reduction of Congenital Hip Dislocation. W. G. Stern, Cleveland, Ohio.
20 *An Unrecognized Etiologic Factor in the Summer Diarrheas of Infants. J. L. Walsh, Caseville, Mich.

16. See abstract in THE JOURNAL, July 28, 1906, page 301.

17. **Relation of Nasal Passages to Eyes and Ears.**—Bryant emphasizes the necessity of attending to the first symptoms of nasal and nasopharyngeal obstructions which are so often the causal factor in producing cerebral symptoms, and many diseases of the eye, ear, larynx, chest as well as stomachic and intestinal disorders, and more general disturbances, nervous and reflex conditions.

18. **New Axis-Traction Apparatus.**—Jacobson's apparatus is composed of a clamp, which attaches to the edge of a table; an outer case, enclosing a worm and gear (which multiply the power); two rods, the lower one telescoping, joined to the clamp by universal joints; a crank-handle for operating the power-producing mechanism; a hand-wheel at the outer end of the telescoping rod for controlling the transit of the outer end of the apparatus through the orbit which it must describe, when in operation, around the universal joints as pivotal points, a steel tape, which may be replaced by another if kinked without taking things apart, and which winds up on a drum on which it is held and around which it is guided by a metal case containing an aperture into which the tape passes and which does not itself revolve; a small axle on which the gear revolves, and a dynamometer, one of the needles of which is pushed along as an index by the needle proper, remaining at the maximum point reached during the operation for later reference. The needle is true to the scale, whether traveling up or down. The apparatus is made chiefly of an aluminum composition, and weighs about five pounds. This instrument enables the accoucheur to employ measured, steady and precise axis-traction, with a minimum of force and no expenditure of physical energy on his part.

19. **Results from Bloodless Reduction of Congenital Hip Dislocation.**—Stern reports statistics, gathered from operators scattered all over the world, which very nearly agree with those as first given out by Lorenz as his own experience. The number of hips reported as successfully operated on since 1900 is 2,593. Ideal results, restitutiones completæ, 48.98 per cent.; anatomic restitutions, 41.76 per cent., 1,084; excellent functional results, 7.22 per cent., 187. Good function from transpositions, 39.98 per cent., 1,036. Failure, redislocation, band function, 12.10 per cent., 314. The discrepancy between failures and good results (about 1 per cent.) is due to inaccuracy of many of the reports. Individual operators have had far better results. These latter results will and must be attained through careful and painstaking work, combined with increasing experience and advanced methods.

20. **Unrecognized Etiologic Factor in Summer Diarrheas of Infants.**—Walsh calls attention to the cathartic property in the grasses which form the food of so many cows from spring to autumn. This property disappears when the grass is dried in the form of hay. The mortality curve follows the life of this type of vegetation, reaching its maximum in July, then gradually declining. Infants get the full physiologic effects and often the toxic effects of the aperient properties in the milk from the grass-fed cows. From October to May there is almost none of this diarrheal tendency apparent. Sterilization does not destroy this poison, which is a chemical one. The cow whose milk is used for infants should be kept off of pasture, and should be stall-fed, as in the winter. The chemistry of the grasses, Walsh states, offers a comparatively new field for study.

St. Louis Medical Review.

September 8.

21 The Problem of Sexual Variants. T. H. Evans, Philadelphia.
22 Origin and Heredity of Matter. (To be continued). J. Wright, New York.

Lancet-Clinic, Cincinnati, Ohio.

September 15.

23 Surgical Treatment of Intestinal Indigestion. E. Harlan Cincinnati.
24 Modern Medical Expert vs. St. Paul, et al, A. N. Ellis, Maysville, Ky.

American Journal of Obstetrics, New York.

September.

25 *Construction of a New Vagina. (To be concluded.) A. Brothers, New York.
26 *Artificial Renal Colic as a Valuable Means of Diagnosis. H. T. Hutchins, Baltimore.
27 Some Common Varieties of Obstructed Labor. S. P. Warren, Portland, Me.
28 A Case of Cyclocephalus in Guam. N. T. McLean, U. S. N.
29 The Fetich of the Ovary. E. V. DeWarker, Syracuse, N. Y.
30 Bladder Affections in Gynecologic Cases. H. Grad, New York.
31 *Excision of a V-shaped Piece of the Posterior Uterine Wall for Anteflexion of the Cervix with the Aid of an Intrauterine Holder. R. C. Coffey, Portland, Ore.
32 Intussusception. C. B. Miller, Washington, D. C.
33 *Large Gelatinous Tumor of the Ovary. A. L. Smith, Montreal, Canada.

25. **Construction of a New Vagina.**—The patient on whom Brothers performed this operation was 21 years of age. The vagina was represented by a quasi-mucous membrane diaphragm, which could be depressed to a distance of a little more than an inch. Careful and repeated examinations failed to discover any distinct evidence of uterus, tubes or ovaries. Beginning just below the meatus urethra, the incision was carried in a circular manner across to the labium minor, down to the perineum and up on the opposite side to the starting point. This circle of quasi-mucous membrane was dissected away in part at its circumference and presented the firmest attachment to the urethra and bladder with lesser adhesions to the lateral regions and rectum. Neither catheter in the bladder nor finger in the rectum was deemed necessary at any stage of the operation. Several bleeding points at the sides were readily controlled by ligatures or torsion. With Sims' glass dilator (1¼ x 4 inches) the diaphragm was firmly pressed against, so that, by dint of snipping in the surrounding connective tissue and considerable pressure against the dilator, the saucer of mucosa was pushed upward to the full length of the dilator, leaving a cylindrical gap of raw tissue below it. While the dilator was kept under tension and pressed firmly against the vaginal vault, an assistant secured Thiersch skin grafts from the inner side of the patient's thigh, and these were placed over the raw surface by tilting the dilator in different directions. At the completion of the operation the dilator was surrounded at its vulvar end with gauze and retained in position under tension by means of long strips of adhesive plaster secured to the buttock and abdomen to prevent the disarrangement of the grafts. A permanent catheter was left in the bladder and the bowels were kept constipated during five or six days.

At the end of this time the dilator was removed, when it was found that a ring of grafts had become adherent within the vaginal canal to a depth varying between ½ inch and ¾ inch. The mucous membrane at the vault looked normal, but there was a raw gap between the two. Suggestions to repeat the grafting over this area were met with refusal on the part of the patient, especially as there seemed to be some prospect of the gap being gradually covered over by the growth of the new skin. The patient was kept in the hospital for a month, the vaginal canal was kept patent by means of a glass dilator which measured 1⅛ x 4 inches. This was kept in place by a stem perforating a cork closing up the open end of the glass dilator. Through the stem two rubber tubes passed antero-posteriorly and were secured to an abdominal belt on the principle of a McIntosh uterine supporter. This the patient wore with perfect comfort, night and day, and she left the hospital with instructions to keep on wearing it during a protracted period of time.

When examined at this time, two fingers easily passed in to a depth of four inches, and the result was regarded as very encouraging. There was not much progress in the extension of the new skin upward, so that she was advised to return to

the hospital and have the raw surface still present covered with grafts. The posterior vaginal surface presented an area of one inch in depth covered by the new skin and two fingers passed readily to a depth of four inches. The vaginal granulating surface was thoroughly curetted and temporarily packed with gauze to check the bleeding. A cylinder had been prepared in the following manner: A glass dilator measuring ½ inch in diameter and 3 inches in length was carefully and smoothly covered with iodoform bandage, until its diameter measured one inch. Over this a thin rubber pouch was snugly drawn and then perforated at numerous points so as to permit the absorption of discharges. On this cylinder grafts of thin skin, secured by a razor from the left thigh, were placed with the raw surface exposed and secured by means of fine catgut. Excepting the two extremities of the cylinder, the entire surface was thus covered over with new skin. The vagina was then thoroughly exposed (after removing the gauze) by means of three deep and narrow-bladed retractors, and the graft-covered plug was introduced. By carefully withdrawing each retractor, exerting pressure centrifugally during the process, the plug was left in the canal with the raw surfaces of the grafts in intimate juxtaposition with the raw vaginal wall. A self-retaining catheter in the bladder and plaster strips retaining the gauze-covered plug in situ completed the operation. The bowels were kept confined with opiates and the patient rigidly maintained the horizontal decubitus during seven days.

At the end of this time the plug was removed and, with the exception of a small area in the left side of the vaginal floor, the entire canal was covered with smooth epithelium. The retention catheter was removed, the bowels were moved and a glass plug (three inches in depth) was secured in place with the McIntosh supporting apparatus. No attempt was made to use a longer or wider tube for fear of disturbing the grafts, some of which had loose ends. One year after the first intervention the patient stated that intercourse had been maintained several times weekly to the complete satisfaction of both parties.

26. **Artificial Renal Colic as Means of Diagnosis.**—Hutchins found that the ability to reproduce, mechanically or otherwise, the pain of which a patient complains is always a most valuable aid in diagnosis. A definite and typical kidney pain (renal colic) can be produced in every instance by forcibly distending the pelvis of the kidney with a bland fluid. In a large majority of cases (98 per cent. in his series), patients are able accurately to differentiate renal pain caused by the method described above, from pains from other causes. By this method a diagnosis can frequently be made in a class of cases, as yet undifferentiated by the medical profession and in which the symptoms are vague and indefinite. Accurate measurements of the amount of dilatation of the pelvis of the kidney may be made with the instrument used, and by this means valuable data are obtained.

The 100 cases studied are divided into four groups: 1. Normal kidney pain produced. Not that pain of which the patient complained. Disease of the kidney ruled out. 2. Kidney pain reproduced. Same pain as that of which the patient complained. Diagnosis of renal or ureteral disease confirmed. 3. Dilated pelvis of kidney. Stricture of ureter. 4. Doubtful cases and failures. Group 1 includes 23 cases. In all the cases, typical kidney pain was produced by the injection of fluid into the kidney pelvis. This pain had a definite location in the superior lumbar triangle. In no case, however, did the pain produced correspond in any particular with the pain of which the patient had previously complained, and disease of the kidney, due to any cause which might lead to permanent or intermittent dilatation of the kidney pelvis, was ruled out. The diagnosis was confirmed later at operation. Group 2 includes 50 cases. In all these cases typical kidney pain or pain referable to the kidney was reproduced and was at once recognized by the patient as the pain of which they had complained and for the relief of which they had entered the hospital. In 35 cases, 25 right and 10 left, the kidney was found to be movable and was suspended. In 8 cases, 4 right and 4 left, the kidney was movable, but operation was refused. In 2 cases, 1 right and 1 left, treatment by bandage was advised. In 3 cases nephrotomy was performed with relief of symptoms. The uterus was suspended in one case and the apendix removed in one case, neither operation affording any relief from the pain.

Group 3 includes 17 cases. In 10 of these cases no operation on the kidneys was performed; pregnancy was a contraindication in one; in another the disease was bilateral, and in a third the patient passed a stone spontaneously. Seven patients refused operation. Of the remaining 7 cases, the kidneys were suspended and the renal pelves folded in one; the stomach, liver and kidneys were suspended in another; stone was removed from the ureter in 2; the ureter was retransplanted into the bladder in one; stricture of the ureter was freed in one; and the kidney was removed in one case. Group 4 includes 10 cases. These cases indicate the limitations of this method of diagnosis. In 6 cases the answers of the patients were so indefinite or the location of the pain produced was so vague that a positive diagnosis could not be made. In 3 cases the same pain was reproduced and its location was fairly definite, and yet in one omental adhesions were found, in another gallstones, and in the third no disease of the kidney was detected. These three cases are regarded as failures. Three of the patients had had previous operations for the relief of pain, but without beneficial result. In one case there was present a large notched tumor of the right flank, supposed to be sarcoma of the kidney. Injection caused pain in this tumor. At autopsy the tumor was found to be of hepatic origin, but closely associated with the right kidney. Pain was easily referred to the tumor by the patient.

31. **Uterine Wall Operation for Anteflexion of Cervix.**—The steps in Coffey's operation are: First, pull down the cervix and uterus with bullet forceps or double tenaculum. Second, insert a cat-claw tenaculum, protrude the fangs and pull the uterus down as far as possible. Third, incise the vaginal mucous membrane at the back of the cervix and dissect up the peritoneum on the posterior surface of the uterus far enough to excise the wedge. Fourth, close the V-shaped incision with strong three-weeks' catgut sutures.

33. **Large Gelatinous Tumor of Ovary.**—Smith reports the case of a woman, aged 54, who complained of a large abdominal tumor, which she had first noticed about a year previously. The abdomen was distended to double the size of a full-time pregnancy by an ovarian cyst, which did not, however, give the usual wave on percussion. The tumor interfered with her breathing so much that for the last six months she had been unable to lie down at night. At the operation the tumor was found to be adherent to the entire abdominal wall in front, but it was easily separated by the hand. The pedicle, which was four inches wide, was hemmed so as not to leave any raw surfaces for the intestine to adhere to. About a quart of free jelly was then removed from the abdominal cavity, but whether this had come out of the small trocar hole made twenty-four hours previously, or whether it came from a rupture of the cyst wall at the back, Smith was unable to say. It appeared as though it had been there for a long time. The contents of the cyst were not like ordinary colloid viscous material, but were more like jelly.

The Journal of Medical Research, Boston.

July.

34 *Studies in Absorption. B. H. Buxton and J. C. Torrey, New York.
35 Microscopic Evidences of Absorption in the Large Intestine. J. L. Bremer, Boston.
36 Two Modifications of the Leischman Stain. R. C. Whitman, Chicago.
37 Regenerative Changes in the Liver: A Study of Experimental Lesions in the Dog. R. M. Pearce, Albany.
38 Simple Way of Using Buchner's Method for the Cultivation of Anaërobic Bacteria. H. J. Nichols and F. Schmitter, Washington, D. C.
39 Trypanosomata and Trypanosomiasis. E. N. Tobey, Boston.
40 Trypanosomata of the Newt. E. N. Tober, Boston.
41 Relation of Autolysis to the Histologic Changes Occurring in Necrotic Areas. H. G. Wells, Chicago.
42 *Case of Blastomycosis: Results of Culture and Inoculation Experiments. J. T. Bowen and S. B. Wolbach, Boston.
43 A New Toxic Action of Horse Serum. M. J. Rosenau and J. F. Anderson, Washington, D. C.

34. **Studies in Absorption.**—Buxton and Torrey investigated the methods by which the animal organism disposes of foreign substances in suspension, e. g., bacteria introduced into the

abdominal cavity. In the case of lampblack some of the particles are taken up by the phagocytes, while others quickly reach the organs, especially the liver and spleen. In the case of typhoid bacilli there may occur an explosive destruction; if destruction is more gradual, large numbers of bacilli make their way into the circulation and are deposited in various organs, especially the liver. There seems to be an immediate rush of particles toward the lymphatics of the diaphragm, whence they pass into the lymph trunks of the anterior mediastinum and then quickly reach the circulation. In time phagocytosis takes place, but at first the particles are free. Another channel of departure from the peritoneum is the omentum. Particles and phagocytic cells become entangled in the fibrinous deposits on its surface. In rabbits especially are typhoid bacilli found on the surfaces of the omentum. Rapid destruction is associated with accumulations of polynuclears, but in general the authors emphasize the part played by mononuclear cells as phagocytes.

42. **Blastomycosis.**—Bowen and Wolbach report a case of blastomycosis in which there was great hyperplasia of the epidermis, minute abscesses surrounded by epithelium, and chronic inflammatory changes in the corium. The organisms were present only in small numbers. Successful cultures were made. The organisms grew on all ordinary media, and best at a temperature slightly above that of the room. The addition of sugars did not materially influence the rate of growth, and there was no marked fermentative action. Inoculation experiments were made with pure cultures on rabbits, guinea-pigs and white mice. The last mentioned were the most susceptible, the alveoli of the lungs being filled with large cells and organisms.

Bulletin of the Johns Hopkins Hospital, Baltimore.

September.

44 *Results of Operative Treatment of Varicose Veins of the Leg by the Methods of Trendelenburg and Schede. R. T. Miller, Jr., Baltimore.
45 Blood-Pressure Changes in Cheyne-Stokes Respiration. J. A. E. Eyster, Baltimore.
46 Observations on a Case of Palpitation of the Heart. A. D. Hirschfelder, Baltimore.
47 The Irish School of Medicine. J. J. Walsh, New York.
48 John Huxham of Devonshire (1692-1768). W. J. Vogeler, Yonkers, N. Y.
49 Popular Medicine in the Eighteenth Century. E. C. Hill, Smithville, Mo.
50 American Hookworm (Necator Americanus) in Guam and China. C. W. Stiles, U. S. P. H. and M.-H. S.
51 Sahli's Desmoid Reaction in Gastric Diagnosis. T. R. Boggs, Baltimore.

44. **Operative Treatment of Varicose Veins.**—Miller presents the results of treatment of varicose veins of the leg as practiced in Johns Hopkins Hospital. Some of the cases were followed ten years or more. Miller claims that varicose veins of the leg are not an incident of senility; the condition is rather a disease of young and middle-aged individuals, over one-third of the cases appearing before the thirtieth year and two-thirds before the fortieth year. From an etiologic standpoint there are two classes, viz., inflammatory and non-inflammatory. The inflammatory group includes about one-third of all cases, phlebitis occurring as a complication or sequel of pregnancy, postoperative convalescence or an acute infection, among which typhoid fever is the most frequent. The pathology of the non-inflammatory group is obscure. In 128 cases the right and left legs are affected in about equal proportion; over one-half of the cases are bilateral. Trendelenburg's operation cured 78 per cent. in a series of 41 cases; this is about the result generally reported. In the first 4 postoperative years 89 per cent. were cured, from the fifth to the eighth postoperative years but 63 patients were cured; the tendency to recurrence of symptoms increases as the postoperative interval lengthens. Schede's operation cured 33 per cent. in a series of 9 cases. Two patients, two years or less since operation, were both cured. Of seven patients, more than two years since operation, but one was cured.

The tendency to recurrence of symptoms as the postoperative interval lengthens is much greater after a Schede than after a Trendelenburg operation. Division between ligatures of the saphenous vein does not ensure permanent occlusion. The venous stream may be reëstablished in three ways, viz.: Dilatation of anastomoses around the point of division (two cases); formation of varices in the scar (three cases); or end-to-end anastomosis of the ligated stumps (three cases). The Schede operation is followed particularly by anastomosis of ligated stumps. Of 6 patients examined there showed an intact saphenous vein running directly through the scar. Functional restoration of the saphenous vein may be, but is not always, accompanied by recurrence of symptoms. Resection of 8 cm. or more of the saphenous vein at the saphenous opening, made through a generous transverse skin incision, is to be preferred to simple division of the vein. Postoperative pulmonary embolism is rare, but has occurred between the fourth and thirteenth days. The onset is marked by sudden dyspnea, cyanosis, tachycardia and signs of collapse accompanied by rise in temperature; the symptoms may subside rapidly, may persist with the physical signs of pulmonary infarct, or may be followed immediately by sudden death.

American Journal of Surgery, New York.

September.

52 Frequency of Blindness Due to an Affection of the Accessory Sinuses. H. M. Fish, New York.
53 Cancer of the Breast, Necessity for Early, Radical Operation. J. C. Stewart, Minneapolis.
54 Ether Narcosis by Rectum. J. A. Stucky, Lexington, Ky.
55 *An Improved Postoperative Rectal Tube. J. M. Lynch, New York.

55. **Improved Postoperative Rectal Tube.**—The tube used by Lynch is made exactly like Tuttle's tube with the exception of the collar which prevents its slipping into the rectum. Lynch describes his tube as follows: Select a piece of stiff rubber tubing about five inches long and one-half inch in diameter, and a thin rubber condom. Cut a small hole in the blind end of the condom and pass the rubber tube over this hole into the cavity of the condom to the extent of about one-half an inch. Tie the condom around the tube with a piece of thread. Then wrap the tube with gauze or cotton to the thickness desired by the operator for distending the sphincter, covering about three inches of the tube. Reflect the rubber condom over this gauze and tie it around the tube at the point where the gauze ceases, leaving one inch or more of the open end of the condom beyond the end of the tube. Now wrap a small roll of absorbent cotton around the tube at the point where the last thread is tied around the gauze, making this roll large enough to form a prominent collar. Then reflect the loose end of the rubber condom backward over this roll and tie it with a piece of silk thread, or throw around it a small rubber ligature. Thus is formed a complete rubber tube with a flange or collar on its lower end; this collar absolutely prevents the tube from slipping into the rectum and at the same time furnishes an excellent means of producing pressure on any surface around the margin of the anus. Such tubes should always be introduced through a bivalve speculum or with the rectum held open by two flat retractors, in order to prevent any tearing of the parts.

The Canadian Journal of Medicine and Surgery, Toronto.

July.

56 A Series of Intestinal Anastomoses. T. S. Cullen, Baltimore.
57 The British Medical Association—Toronto Meeting, August 21-25, 1906.

August.

58 Acute Descending Paralysis—Landry's Paralysis. A. McPhedran, Toronto.
59 Preliminary Program of the Seventy-Fourth Annual Meeting of the British Medical Association.

Medicine, Detroit, Mich.

August.

60 *Botanical Diagnosis of Leptothrix Racemosa and Its Relations to the Modern Doctrine of Bacteriology. F. Vicentini, Chieti, Italy.
61 Etiology of Apoplexy. C. L. Mix, Chicago.
62 Prognosis and Treatment of General Apoplexy. J. Grinker, Chicago.
63 General Symptoms of Apoplexy. D'O. Hecht, Chicago.
64 Cerebral Localization in Apoplexy. S. Kuh, Chicago.

60. **Botanical Diagnosis of Leptothrix Racemosa and Its Relations to the Modern Doctrine of Bacteriology.**—This elaborate paper was prepared for the Section on Stomatology at the recent session of the American Medical Association in Boston, but was not read, as Dr. Vicentini was unable to attend.

Wisconsin Medical Journal, Milwaukee.

August.

65 *Purpura. W. H. Neilson, Milwaukee.
66 *Apoplexy, Its Diagnosis and Treatment. U. O. B. Wingate, Milwaukee.

65-66. See abstracts in THE JOURNAL, July 14, 1906, page 143.

Northwest Medicine, Seattle, Wash.

August.

67 Sources of Infection of Typhoid. J. M. Semple, Spokane.
68 Early and Differential Diagnosis of Typhoid. R. M. Smith, Seattle.
69 Public and Professional Indifference to Typhoid, Prophylaxis in Rural Districts, Small Towns and Cities. E. E. Heg, Seattle.
70 Water Supplies of Cities and Towns as Bearing on the Prevention and Spread of Typhoid. R. A. Bebb, Tacoma.
71 Case of Amebic Dysentery, Originating in Montana: Case of Latent Malaria. J. F. Spelman and W. B. Wherry, Anaconda, Mont.

Columbus Medical Journal.

August.

72 Diagnosis and Treatment of Incipient Pulmonary Tuberculosis. J. D. Dunham, Columbus.
73 Tuberculosis in State Hospitals. G. Stockton, Columbus.
74 Abort Inflammatory Diseases. J. M. Shaller, Denver.

Detroit Medical Journal.

August.

75 Suggestions to the Medical Witness. C. A. Lightner, Detroit.
76 Treatment of the Albuminuria of Pregnancy. C. G. Jennings, Detroit.
77 Progress in Pathology and Bacteriology. J. Sill, Detroit.
78 Tuberculosis in Detroit. G. L. Kiefer, Detroit.

The Laryngoscope, St. Louis, Mo.

August.

79 Ocular Manifestation in Intracranial Diseases of Otitic Origin. W. E. Spicer, New York.
80 Relation of Systemic Diseases to Otitis Media Purulenta and its Complications. J. J. Thomson, New York.
81 Treatment of Acute Suppurative Otitis Media. E. P. Fowler, New York.
82 Clinical Value of the Blood Examination in Otitis Media Purulenta and Its Complications. L. M. Hubby, New York.
83 Bacteriology of Suppurative Ear Diseases. D. S. Dougherty, New York.
84 Lumbar Puncture; Its Clinical Value in the Intracranial Complications of Suppurative Otitis Media. S. J. Kopetzky, New York.
85 Etiology, Diagnosis and Treatment of Auricular Chondritis and Perichondritis. L. J. Denchfield, New York.
86 Technic of Ossiculectomy. R. J. Held, New York.
87 Observations on the Fossæ of Rosenmüller. T. L. Brunk, Decatur, Ill.

Milwaukee Medical Journal.

August.

88 President's Address Before the Brainard Medical Society. G. J. Kannheimer, Milwaukee.
89 Etiology, Symptomatology and Diagnosis of Placenta Prævia. E. J. Butzke, Milwaukee.
90 Placenta Prævia. J. J. Schoots, Milwaukee.
91 Eye Clinic of the University of Breslau. C. Messmer, Breslau, Germany.
92 Gynecology. E. F. Fish, Milwaukee.

Medical Fortnightly, St. Louis.

September 10.

93 Urethrotomies. R. Harrison, London.
94 Diagnosis of Pyloric Stenosis. E. Walker, Evansville, Ind.
95 Treatment of Chlorosis. G. F. Butler, Chicago.

American Journal of Urology, New York.

September.

96 Surgery of the Ureter. E. Fuller, New York.
97 Symptomatology of Ureteral Diseases. D. H. Stewart, New York.
98 Ureteral Lavage. W. Ayres, New York.
99 Cystotomy in the Female. E. Garceau, Boston.

Mississippi Medical Monthly, Vicksburg.

September.

100 President's Address Before the Bolivar County Medical Society. J. M. Wells, Cleveland.
101 Employment of Rest in the Rational Treatment of Pulmonary Tuberculosis. M. D. Ethridge, Silver City, N. M.
102 Surgical Shock. E. R. Gordon, McComb City.
103 Multiple Neuritis—Its Diagnosis and Treatment. H. L. Sutherland, Rosedale.
104 Drugs—Their Use and Abuse. L. D. Dickerson, McComb City.

The Medical Standard, Chicago.

September.

105 Bromin in Septic Conditions. M. O. Terry, New York.
106 Successful Treatment of Sprains with Mechanical Vibration. N. M. Eberhard, Chicago.
107 Professor Eiselberg's Clinic. L. Waite, Chicago.
109 Practical X-Ray Therapy. N. M. Eberhard, Chicago.
110 Tractus Vasculàris and Tractus Nervosus in Splanchnoptosia. B. Robinson, Chicago.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

September 1.

1 *Educational number.

1. Educational Number.—In accordance with its custom the *British Medical Journal* devotes this entire issue to a discussion of subjects that have a direct bearing on medical education. The first editorial is on "The Profession of Medicine" and discusses this from the standpoint of what the profession has to offer a physician socially, intellectually and commercially. The second editorial, entitled "The Portals of the Profession," considers the question of the degree, the choice of a medical school, and the cost of a medical education. The regulations of the general medical council, preliminary, scholastic, etc., are also considered. Other topics mentioned more or less fully are the English medical corporations, the universities and colleges of England, Scotland and Ireland; the London and provincial clinical hospitals; the medical education of women; postgraduate study; tropical medicine; preventive medicine; degrees for practitioners; dental surgery, and the public service.

The Lancet, London.

September 1.

2 Educational number.

The Practitioner, London.

September.

3 Angina Pectoris. C. A. Gibson.
4 *An Improved Method of Putting up Fractured Clavicles. T. D. Manning.
5 Diagnosis of Abdominal Tumors in Relation to Pregnancy. W. E. Fothergill.
6 *Asphyxia Neonatorum; Its Causes and Treatment. J. S. Sheill.
7 Use of Rubber Gloves in Abdominal Operations. F. E. Taylor.
8 Case of Infantilism. W. B. Ransom.
9 Recent Progress in Otology. R. Lake.
10 Estimation of the Functional Value of the Kidneys. J. W. T. Walker.
11 History of a Diphtheria Outbreak (Complicated with Vincent's Angina) at the Lambeth Parochial Schools, West Norwood, May to July, 1905. J. Priestley.

4. Improved Method of Putting Up Fractured Clavicles.—This apparatus has three parts: a shoulder-piece—practically half of a short waistcoat—an elbow piece, and webbing to draw back the upper arm. All are interchangeable. The first two are made of jean, and the webbing is similar to that used for babies' binders. First the shoulder-piece is fitted on the uninjured side, taking care that the loop to support the hand comes in front; a pad is then placed in the axilla, and the arm-piece is tied on round the arm as close up to the axilla as possible, the two free tapes at the end being loosely tied to the lower two tapes on the back of the shoulder-piece; lastly, the elbow-piece is put on, the two tapes behind being tied to the upper two on the back of the shoulder-piece, while in front, the arm having been placed in the usual completely flexed position, with the hand well up on the whole shoulder, the loop is buttoned over the wrist, the upper tape is passed through the small loop opposite to it on the elbow-piece, and tied to the uppermost one on the shoulder-piece; the adjustment of the last two pairs of tapes is obvious. The arm on the injured side is fixed in good position and all that now remains is to tighten up the tapes. The appliance is clean; there is no risk of dermatitis; it is a great economy of time for the surgeon, for the retying of a tape or two is much more quickly done than the application of much strapping, and also, if the patient lives at a distance, any intelligent attendant can soon learn to adjust any tapes which may work loose.

6. Treatment of Asphyxia Neonatorum.—Sheill describes his method of treating a typical case of asphyxia as follows: The child born, its cord is ligated and cut, and its legs wiped dry. Suspended by its legs, the mucus or other matter is removed from its air passages by means of damp cloths and by the mucus evacuator devised by him for that purpose. Next, the child is rapidly transferred to a large bath containing four inches of water at about 110 F. Into this it is placed supine, a rolled towel beneath its shoulders as in Sylvester's original description, so that only its head and face are above water; a small clip forceps is placed on its tongue and allowed to hang

to one side, using the angle of the child's mouth as a fulcrum to draw the tongue forward and to keep it there. Counter-traction is made by the nurse or other assistant on the infant's feet, while the operator performs the typical Sylvester method of artificial respiration. Meanwhile the following solution is injected subcutaneously over the deltoid muscle:

Standardized tincture of belladonna...gr. i	|066
Strychnin .....gr. 1/100	|00066
Whisky .....m. x	|66

This injection usually gives a noticeably beneficial result in about three and a half minutes, and the dose may be repeated in fifteen minutes, if required. Now an ordinary enema syringe is dropped into the bath and about two ounces of the bath water is gently injected into the child's rectum. At intervals the infant is lifted out of the water and, while suspended by the feet, its spine is well rubbed with whisky or camphor liniment and the mucus evacuator used again. As the child is lifted from the bath, the temperature of which is maintained at the original height, and suspended as before, it may at intervals be slapped, rubbed and blown on with the breath, especially the latter in the face, which tends to stimulate reflexly the respirations. A little later a splash of cold water down the spine, or more effective still, in the face, will probably produce a gasp. Now Sylvester's method, unlike Schultze's, can be timed to act with the respiratory effort of the rescued child; when it gasps like a dying trout, as it is an inspiratory effort, draw up the arms quickly, and if it cries, however freely, compress the thorax to assist its extirpation. Do not use the cold bath, even for a moment, until well into the livid state with a strongly beating heart, otherwise a fatal collapse may result. Should the child, in spite of this combination of methods, fail to be resuscitated, the operator may at any rate feel assured that the best has been done for it.

The Dublin Journal of Medical Science.

August.

12 Clinical Report of the Rotunda Hospital. E. H. Tweedy.
13 Pygmies in Sickness and in Health. W. P. Cockle.
14 Stokes-Adams Syndrome. T. H. Peyton.

The Australasian Medical Gazette, Sydney.

July 20.

15 Epidemiology of Plague. (To be continued.) J. A. Thompson.
16 Desirability of Amending the Medical Acts. A. A. Lendon.
17 Three Cases of Primary Sarcomata of the Stomach. A. Mac Cormick and D. A. Welsh.
18 Case of Syncopal Bradycardia. J. M. Gill.
19 General Principles of Therapeutic Inoculation with Special Reference to Tuberculin. A. E. Mills.
20 Case of Spontaneous Disappearance of a Tumor (Probably Fibromyoma) during the later Months of Pregnancy. A. N. McArthur.
21 Observations on the Microbiology of Syphilis. W. J. Munro.

Revue de Gynécologie, Paris.

Last indexed, page 592.

22 (X, No. 3.) *Pozzi Livre d'or—(souvenir volume.) Une hystérectomie abdominale en 1906. J. L. Faure.
23 *Stérilité. A. Pinard.
24 De l'hystérectomie abdominale totale et subtotale. J. Boeckel (Strasburg), 75 cases.
25 *Souvenirs gynécologiques. A. Reverdin (Geneva).
26 *La méthode oxygénée en gynécologie. J. Thiriar (Brussels).
27 Le mécanisme de l'inversion utérine. H. Treub (Amsterdam).
28 Cas d'inversion utérine non puerperale. Mendes de Léon (Ib.)
29 Recherches expérimentales sur l'entrée de l'air dans les veines du bassin. A. Poncet and X. Delore (Lyons).
30 *L'opération transpéritonéale dans le traitement des fistules vésico-utéro-vaginales. E. Forgue.
31 Sur la myomectomie abdominale. A. Monprofit (Angers).
32 Une statistique de laparotomies pour affections utéro-annexielles en 1905. A. Martin (Rouen).
33 *Traitement chirurgical des grossesses extra-utérines avancées avec mort de fetus (advanced tubal pregnancies, 5 cases). H. Barnsby (Tours).
34 *Des rétentions rénales à la suite de l'hystérectomie vaginale. F. Legueu (Paris).
35 Du diagnostic de l'appendicite et de quelques cas de para-appendicites gynécologiques. P. Thiéry (Ib.)

22. **The Pozzi "Livre d'or."**—The souvenir volume presented to Prof. S. Pozzi on the completion of 20 years of teaching at the Hôpital Broca, is said to mark an epoch in the history of gynecology in France. Pozzi's service was the first in France to assert the independence of gynecology and, in order to show the present standing of the science, Faure describes with minute detail an ordinary abdominal hysterectomy as done to-day in a well-equipped operating-room. The present record is that 95 per cent. of the patients are cured by the intervention, and he thinks we have reached the limit of perfection in our technic. The surgeons of A. D. 2000 will not perform an abdominal hysterectomy any better, he declares, than it is done to-day, although by means of discoveries beyond our ken at present they will not have to perform the operation so frequently as we do. All the articles in this number of the *Revue* are taken from the Pozzi souvenir volume.

23. **Sterility.**—The subtitle of Pinard's article is "What the physician should know and do to be able to treat sterility." He remarks that the percentage of families without children is about the same in various countries, 11.3 per cent. at Paris and 12.8 per cent. at Berlin, for example. The cause of the sterility is in the wife in about 60 per cent., and in the husband in about 40 per cent. Sterility in the female due to congenital external anteflexion is best treated by dilatation with the catheter, repeated two or three times after each menstrual period, and this treatment kept up for months. Pinard has known conception to occur after 9 and 12 months of this treatment. It not only restores the uterus to place, but overcomes the stenosis both of the external and internal os at the same time. In case of non-painful but scanty and irregular menses, after long regularity, he has restored conditions to normal with consecutive pregnancy in hundreds of cases by the simple restriction of the diet to milk alone for a month or so. In case the menses have stopped, with a uterus rather above medium size, the trouble is due to a premature menopause, beyond remedy. When examining the husband, he must never be told that the absence of spermatozoa is permanent. Pinard knows of three men who committed suicide on being told this. Iodid treatment has given good results in some cases of gonorrhea or syphilitic orchitis. In case of impotence, hygiene alone should be applied, but, with malformation of the genital organs, the semen fertile, artificial fecundation may be indicated.

25. **Gynecologic Souvenirs.**—Reverdin writes from his "anecdotage" an interesting sketch of the rise and development of gynecology in France, and of various national and international gatherings of specialists. He particularly comments on the greater confidence and liability of better results when a surgeon is operating in his accustomed environment. An invitation to operate when visiting a clinic away from home should not induce a surgeon to perform an operation, involving risk of life, merely because his vanity has been flattered by the invitation and the deference shown him. He advances this merely as his opinion, but confesses that it is based on several unfortunate personal occurrences. The great benefits of visiting others' clinics and operating-rooms he amply extols, saying that this intercourse with other minds and technics is one of the chief advantages of congresses, and that he does not agree with Mme. de Staël's dictum: "When men are congregated together their ears lengthen out."

26. **Oxygen in Gynecology.**—Thiriar has been experimenting with oxygen in gynecologic affections for a dozen years, and published his first results in 1899. His experience since has confirmed his first assertions and he now proclaims his belief that oxygen is the natural remedy for infection with anaërobes, especially gaseous septicemia, and is the antiseptic of the day. It is also the best means, he says, for preventing and curing septic complications in gynecology, and for treatment of all gynecologic infections. After the vagina has been rinsed he introduces an ordinary vaginal cannula connected by a rubber tube with the tank of oxygen. The cannula is held in place with a T bandage, and with a pad of cotton applied outside. The oxygen is then turned on and is allowed to flow for several hours without further attention. When the cannula is withdrawn a large pad of cotton is applied with a T bandage. The oxygen may be used thus the day before an operation, and resumed a few hours afterward. The oxygen penetrates into every crevice in the vagina and escapes through the cotton pad. Bacteriologic examinations before and after show the efficient bactericidal action of the protracted application of the gas. Preventive, preoperative asepsis of the vagina is easily and certainly obtained by this "méthode oxygénée" as he calls it. In case of an adherent pyosalpinx with contamination of the small pelvis with very virulent pus, after the toilet of the cavity, he introduces two long tubes, with an opening at the tip, sometimes interposing a wick of iodoform

gauze. One of these tubes is connected with the tank of oxygen, the other acts as a siphon, its outer end being in a vessel containing an antiseptic solution. The abdomen is closed as usual, and the oxygen turned on; the bubbles rising in the fluid in the vessel show the force of the current. The outflow of the oxygen sweeps along all the secretions which otherwise might accumulate and serve as nests for bacteria. The secretions are sometimes so abundant that the fluid has to be renewed several times during the day. Since this oxygen treatment has been in constant use, there has not been a single instance of infection of the peritoneum, even when it had been soiled. A number of instructive cases are related, among them that of a woman of 42 with rupture of the uterus during childbirth. The omentum protruded from the vagina, the pulse was thready, 120, respirations 32, temperature 36.6 C. The entire peritoneal cavity was found soiled with meconium, etc., and a fibrinoplastic exudation already coated the intestines. The uterus was torn for 10 cm. and the vagina for 5. After abdominal hysterectomy and the toilet of the region the oxygen and siphon tubes were introduced as far as the pouch of Douglas and the abdomen closed. The oxygen was turned on, the force sending up a bubble at a time, and this was continued for five days. The pulse and respiration soon returned to normal and the temperature never rose above 38 C. The patient was dismissed completely cured in three weeks. The oxygen undoubtedly, Thiriar states, prevents formation of adhesions and restores normal conditions in the parts. When the oxygen is used in an established peritoneal infection, he passes the jet of oxygen over the parts in the same way that furniture is cleaned with compressed air. It breaks up and removes fibrinous deposits, before the continuous flow and siphon are arranged. Several separate tubes and siphons might be used to advantage, he declares, in some cases. In tuberculous peritonitis he evacuates the ascites through a buttonhole incision, and sends a stream of oxygen into the cavity for ten minutes. He then closes the abdomen and awaits with confidence the cure which is certain, he says, to occur in a few days. In infectious gynecologic conditions, metritis, etc., he uses a two-way sound with a gentle flow of oxygen, kept up for two or three days. Even if a little oxygen should get into the circulation this is not so dangerous, he thinks, as some observers have insisted. He has never witnessed any untoward effects from the oxygen method. One patient with hemorrhagic metritis succumbed just as the arrangements were completed, but before the current had been turned on. Reverdin in the preceding article also reports excellent results from the oxygen treatment, without by-effects. [Costa, in Italy, used the oxygen intermittently, as he reported last year, without any satisfactory results.—ED.]

30. **Transperitoneal Operation for Vesicovaginal Fistula.**—Forgue's 5 illustrations show the various phases of the operation which he successfully performed in a case of extensive laceration of the bladder, vagina and cervix in a x-para of 43.

33. **Treatment of Extrauterine Pregnancy Near Term.**—Barnsby's experiences with 5 cases compel him to advocate marsupialization with patient waiting for expulsion of the placenta in all cases of extrauterine pregnancy, with the fetus dead, within 2 months of term. Total extirpation should be reserved for the rare cases of tubal pregnancy in which there are no adhesions between the fetal sac and the adjacent organs. Marsupialization and expectancy, he states, eliminate the danger of hemorrhage, and reduce the chances for infection. The whole intervention is thus extraperitoneal, and the prognosis is good; these advantages, he declares, outweigh the drawbacks of the incomplete operation. In draining, a T tube introduced into the cul-de-sac of Douglas insures the drainage of the lower part of the sac.

34. **Renal Retention of Urine After Vaginal Hysterectomy.**—Legueu has observed 4 cases of this kind, the hypertension of the kidney and the infection occurring apart from any accidental injury of the ureters, that is, without these structures having been clamped.

Semaine Médicale, Paris.

36 (XXVI, No. 34.) *Le présent et l'avenir de la médecine européenne en Chine. L. Legrand.

37 (No. 35.) *La polycythémie splénomégalique. L. Cheinisse.

36. **Prospects of Western Medicine in China.**—Legrand, physician to the Imperial Railroad Company in China, here gives an interesting sketch of the Chinese character in relation to modern medicine. The Chinese do not fear death; they do not think of it; their attitude is constantly heroic before the inevitable. Their sensibilities are not so keen, the capacity of suffering and enjoying is less, they are lazy in body and mind, and penurious, while they are imbued with a sense of the instability of human goods, owing to injustice, revolutions, etc., and they have a profound and atavistic disbelief in a personal future life. Their ideal of earthly happiness is to lie and dream away the hours, and the idea of perpetual rest in the grave is not repelling. The native physicians have a comparatively low position and generally have some other means of support. As absolutely nothing is free in China, not even the food in the prisons, they can not conceive why a physician or surgeon gives free consultations, and they attribute to him every motive but the right one. The medical missionaries in China are looked down on, Legrand adds, and their motives misunderstood for this reason. The Chinese say: "What crime has this foreigner committed that he should be banished from his country and have to come here to tend the sores of the coolies who ridicule him when he has finished? He must be very ignorant and awkward to be reduced to tending the dregs of the people and not even to demand the few pennies that the poorest Chinese doctors would ask for such services." Some of the applicants at his clinic come to steal, others merely to beg, and others just to ridicule the foreigner among themselves. Even if Chinese students become thoroughly trained in medicine, it can be only in the science; they will lack the imaginative, constructive and synthetic faculties which make of the science an art. China will absorb all that can be learned from the Occident in respect to locomotives and cannon, and everything else that will enable it to defend better its traditional civilization against the outside world. Unless there is a complete regeneration, however, both in character and ideas, western medicine will have little chance to spread in China or to take a dignified and remunerative position there. The Chinese have a saying, dating from eleven centuries before our era, that "no one can be called a physician who does not cure six out of every ten patients, for, if only five recover, the patient is as well off without him, as half of all the sick get well without aid."

37. **Polycythemia with Enlarged Spleen.**—Cheinisse analyzes the various communications that have been published on this subject, and draws the clinical picture of the disease much as presented in an editorial in these columns recently (page 510). He remarks in conclusion that, on account of the lack of any specific medication or measures, splenectomy might be justifiable, as advocated by Vaquez and Laubry. Quinin gave encouraging results in Begg and Bullmore's and in Zimlick's cases, and arsenic in Türk's case and in others.

Berliner klinische Wochenschrift.

38 (XLIII, Nos. 25-26.) Das Pathologische Institut zu Berlin. J. Orth.

39 Zur Kenntnis der Meningitis serosa spinalis. F. Krause. Successful operation.

40 Changes in Concentration of Urine and Blood Under Influence of Mineral Waters.—Ueber Konzentrationsveränderungen des Harnes und des Blutes nebst Darreichung verschiedener Mineralwässer. J. v Szabohy.

41 Inhalation frei zerstäubter Flüssigkeit bei der Behandlung des chronischen Bronchial-Katarrhs. Stemmler.

42 Carbonated Baths and Reaction of Circulatory Apparatus.—Wie reagirt der normale Zirkulationsapparat auf natürliche Kohlensäurebäder? F. Kisch, Jr.

43 Physiologische Versuche mit Moorbädern (mud baths). O. Tuszkai (Marienbad).

44 Die Stellung der Dermatologie in der Medizin. E. Lesser.

45 *Der therapeutische und symptomatische Wert der Lumbal-Punktion bei der tuberkulösen Meningitis der Kinder. E. Schlesinger (Strasburg).

46 *Two Cases of Tumors Compressing Spinal Cord Successfully Removed.—Ueber Fälle von erfolgreich operierter Rückenmarkshautgeschwulst. H. Oppenheim and M. Borchardt.

47 *Leukemia Without Leukemic Blood?—Leukämie ohne leukämisches Blut. C. A. Ewald.

48 Das Heufieber und seine Serumbehandlung (hay fever). Kammann.

49 *Die Gonorrhoe-Behandlung mit Stauungs-Hyperämie. S. Jacoby (Berlin).

50 *Zur Diagnose des Magencarcinoms (gastric cancer). L. Kuttner (Ewald's clinic, Berlin).

45. **Lumbar Puncture in Tuberculous Meningitis.**—Schlesinger has found that by repeated lumbar puncture it is possible to prevent the appearance of convulsions in tuberculous meningitis. A single puncture may be sufficient in some cases, even in the moribund. He advises it as early as possible, and allows as much cerebrospinal fluid to escape as flows spontaneously. When tubercle bacilli of comparatively attenuated virulence are found in the cerebrospinal fluid, the outcome may possibly prove favorable; 5 cases have been published in which recovery occurred, although tubercle bacilli were found in the cerebrospinal fluid. None of his patients recovered, but he has been much impressed with the prompt benefit that followed lumbar puncture.

46. **Three Cases of Tumors Compressing the Spinal Cord.**—Borchardt has had the good fortune to operate in 3 cases of tumors compressing the spinal cord with a successful outcome in each. The findings are illustrated. The symptoms in the first case were atrophic paresis of a segmentary character in the left arm with corresponding anesthesia and the symptom-complex of the Brown-Séquard hemiplegia. The patient was a woman of 33, who complained of pains between the shoulder blades and in the left shoulder for four or five months, with weakness of the left arm and stiffness in the left leg. By the end of the ninth month the contracture and paralysis had increased to complete helplessness. The assumed benign tumor was found, as diagnosed, at the sixth and seventh cervical vertebræ. The results were the gradual subsidence of the symptoms of compression. In the second case the symptoms were more complicated and indicated considerable compression of the spinal cord at the fourth and fifth dorsal vertebræ. The first symptoms had been pains in the legs, abdomen and back, weakness in the right leg, disturbances in micturition, impotence, and paresis. The tumor in this case was soft and extended vertically for 5 cm. with a small projection to the left. The symptoms have gradually subsided to some extent since the recent removal of the tumor, and the patient is now able to walk, although still with a gait suggesting ataxia. The other disturbances have righted themselves. The tumor was exactly in the median line, which accounted for the unusual character of the symptoms. Oppenheim gives an illustration of five tumors removed from the living subject on his diagnosis, and mentions three others which are not represented in the picture. Borchardt operated by laminectomy at a single sitting, and reviews various details and general features of operations affecting the spinal cord, especially the danger of secondary infections. In the first case the operation was followed by obstinate bronchitis, incontinence both of urine and stools, catarrhal cystitis for three weeks, decubitus and severe lancinating pains in the legs, but these gradually subsided and the patient is now so well that she can walk for hours and has entire charge of the housekeeping and garden. She is the wife of a workingman, and refused to consent to the operation for five months after the diagnosis had been made. Convalescence in the second case was disturbed by intensely severe pains in the penis, buttocks, and legs, requiring large doses of morphin, but they subsided spontaneously after a few days. In a third case the tumor was found as diagnosed at the sixth dorsal vertebra and its removal was very tedious, but the incision, 25 cm. long, healed completely by the seventeenth day.

47. **Anatomic Leukemia Without Leukemic Blood.**—Ewald describes a case with autopsy in which the symptoms indicated acute myeloid leukemia running a fatal course in about seven weeks. The patient was a robust man of 37. The autopsy disclosed hyperplasia of the spleen, lymphomatous infiltration of the liver and kidneys, "raspberry jelly" bone marrow, hemorrhages in kidneys and stomach, fatty degeneration of heart with enlargement and pericarditis with adhesion. The microscopic findings also were those of leukemia. At the same time the blood did not present any of the characteristics of leukemia and there were no pains in the bones and no enlargement of the peripheral glands. The lack of the latter and the negative blood findings, as well as the rapidly fatal course of the disease, spoke against splenic anemia, and nothing was found to indicate a septic process.

49. **Passive Congestion Treatment of Gonorrhea.**—Jacoby has been impressed with the favorable influence exerted on gonorrheal processes by the application of an apparatus for suction therapy according to the Bier-Klapp technic. A sound is used that fits into the anterior urethra air-tight and is connected with a rubber bulb. The sound is made with three long, deep grooves, with five comparatively large openings in each groove. In order to bring all parts of the mucosa under the influence of the suction, the sound is turned the second time at right angles to its position at the first sitting. He leaves it in the urethra for from 10 to 15 minutes.

50. **Diagnosis of Gastric Cancer.**—Among the various diagnostic points emphasized in this review is the sudden beginning of the symptoms calling attention to the stomach, in persons previously free from digestive disturbances. In Kuttner's experience the symptoms were generally referred to some error in diet, and the pains and vomiting were assumed at first to be acute and then chronic dyspepsia. In three instances the first symptom was profuse hemorrhage in the stomach. In some cases, however, the affection developed insidiously with merely vague dyspeptic disturbances. He does not believe that there is much danger of the development of cancer on the basis of chronic gastric catarrh. He has encountered only four in his hundreds of cancer cases in which there were evidences of preceding atrophy of the stomach. The second important sign, after the abrupt onset, is the progressive decline of the appetite. Complete anorexia, sometimes actual repugnance for food, especially for meat, is an important and sometimes a very early symptom of cancer. With ulcer the appetite is generally good, and the retention of a good appetite to the last may be exceptionally observed even with cancer. His experience has been that gastric cancer is not restricted to middle age, but is liable to occur earlier, and is frequently incorrectly diagnosed in the young. A history of cancer in the family, especially gastric cancer, or of preceding ulcer or of trauma, affecting the stomach, should be regarded as predisposing factors. Sometimes the patients are unusually pale, probably from occult bleeding, and sometimes there may be loss of weight and strength, but this is not inevitable. He had three patients, working men, who were able to keep at their work until the very last stage of malignant disease. Obstinate itching of the skin has been observed frequently in case of gastric cancer, and he regards it as an important sign, as also putrid smelling eructations accompanying dyspeptic disturbances. It is important, he states, to smell of the stomach tube in dubious cases. A particle of extremely putrid matter may give the clue to an ulcerating cancer. Pain is not characteristic and of not much differential value. The finding of "coffee grounds" in vomit is suspicious. Deficient production of gastric juice has no differential value; but the constant finding of lactic acid justifies the assumption of cancer, although it is not an early sign. He agrees with Glässner that in case of reduction equally in both the lab ferment and pepsin, the tumor may be in the fundus, while if the lab is in approximately normal amounts while the pepsin is reduced, a tumor in the pyloric region may be suspected. Rare instances are known in which the motor function has remained approximately normal nearly to the end. In testing the motor function it is necessary that the conditions should be identical at each test, and it is important that an abundant meal should have been ingested the evening before examination of the fasting stomach. If even minute amounts of blood with pus or the latter alone or with mucus are found in the fasting stomach, the assumption of cancer is almost certain. Blood alone is not so significant, although the constant finding of occult blood has great differential value, especially in cases without retention of stomach contents and with deficient gastric juice. When the gastric juice secretion is normal and there is stagnation, the occult blood findings are unable to decide the question as to ulcer or cancer. The constant absence of blood in stomach content and stools is good presumptive evidence against cancer. Albuminuria was rare in Kuttner's cases of gastric cancer, but the urine generally contained large amounts of indican and of Rosenbach's pigment. The repeated finding of albumosuria and a positive diazo reaction, under some cir-

cumstances, suggest cancer. Another sign is the discovery of amebæ and flagellates in the mucus of the fasting stomach, and also the presence of albumin in the fluid in the fasting stomach according to Salomon's method. Kuttner's extensive experience has confirmed the diagnostic value of this albumin test. Salomon gives fluid food, free from albumin, at noon. In the evening he rinses the stomach clean. The next morning the stomach is rinsed out several times with 400 c.c. of physiologic salt solution, and the albumin content of the rinsing fluid is determined. When the fluid turns flaky at once under the Esbach test or if the Kjeldahl test shows more than from 20 to 25 mg. of nitrogen in 100 c.c. of rinsing water, the suspicion of cancer is justified. It is possible for albumin to be eliminated in the stomach in simple gastritis, but this must be very rare, as Kuttner, Salomon and others have never encountered a case in which much albumin was found in the stomach content. Another sign of cancer is pleuritis on the left side. Kuttner has repeatedly found this pleuritis accompanying cancer in the lesser curvature. Visual inspection of the interior of the stomach and study of the blood are less promising than Roentgen examination. The presence of a cancer is liable to induce abnormal peristalsis, and also to cause the stomach outline to be abnormal at some point or points. The shadow cast by the stomach content also shows extraordinary recesses and projections. In regard to operability, it must be remembered that a small carcinoma may prove to be fully as malignant, if not more so, than the large ones.

Centralblatt f. d. Grenzgebiete d. Med. u. Chir., Jena.

Last indexed, page 241.

51 (IX, No. 11.) *Die Therapie der Larynx-Tuberkulose. R. Imhofer. Review of the literature. (Commenced in No. 6.)
52 (Nos. 15-16.) *Weitere Ergebnisse der Roentgen-Behandlung bei Leukämie und Pseudoleukämie. K. H. Schirmer. Review of the literature.

51. **Treatment of Laryngeal Tuberculosis.**—Imhofer analyzes 253 articles published on the subject of laryngeal tuberculosis between 1900 and 1905. His conclusions are to the effect that at present we are as far removed from the resigned nihilism of former days as from an absolutely certain successful treatment. The first question is to decide whether or not curative or only palliative measures are required for the case in hand. This is decided by the general condition and the state of the lungs. The next step is to apply general treatment, and in this the environment of the patient is of extreme importance. The selection of the proper local treatment for the individual case is also a problem. It may be necessary to vary the caustic and also its mode of application to conform to the individual reaction. It is wise also to interpose occasionally a few days of rest with merely a local anesthetic. It is of the greatest importance after curettement to wait until the operative wound has entirely healed and the success of the intervention is determined before attempting to repeat it. A brief trip to the country sometimes has an excellent effect in the interim. Palliative treatment should be restricted to the minimum necessary to relieve the subjective disturbances.

52. **Roentgen Treatment of Leukemia.**—Schirmer has found 109 articles published in the last two years on the treatment of leukemia and pseudoleukemia with the Roentgen rays. Most of the writers used fractional doses and numerous sittings, but the Vienna school advocates a single complete sitting. Holzknecht of Vienna has had the most extensive experience with Roentgen treatment of leukemia, but he has not yet published his report. It seems to be the general opinion that in Roentgen treatment we possess a generally promptly efficient means to improve materially even severe cases of mixed-cell leukemia. Recurrences are generally amenable to the same treatment, but it seems natural to suppose that as the disease progresses it will prove more refractory to the rays. Schütze has reported a unique case in which there was no recurrence for three and a half years after the exposures. The results are less constant in lymphatic leukemia; 7 cases in which it proved successful are balanced by 3 in which no benefit was derived. It is certainly worth a trial, although it must not be forgotten that remissions are not infrequent in lymphatic leukemia. Besides the true remissions there are also pseudo-remissions induced by lytic processes affecting the atypical, immature forms of leucocytes. In pseudo-leukemia and in Hodgkin's and Banti's diseases, favorable results have been reported by various writers in 11 cases of pseudo-leukemia and in 4 of Hodgkin's disease. Liebermeister reports that a woman of 60 reacted to the exposure with weak heart action; the glands in the neck became still larger and death soon followed. Krause observed ulceration in the neck after exposures in a case of pseudo-leukemia. Quadrone reports that pleuritis with effusion developed in 2 patients with lymphatic pseudoleukemia after Roentgen treatment. In 2 cases of symmetrical enlargement of the parotid gland, the swelling subsided under the rays, although recurrence was soon observed in one case. No results were apparent in Krause's 3 cases of splenic anemia and 2 of enlargement of the spleen of unknown origin. Bozzolo insists on the favorable action of the rays in Banti's disease, and recently they have been applied in treatment of lymphomata of tuberculous nature. The theoretical views in regard to the action of the rays are conflicting. When the results are negative in case of lymphatic leukemia and pseudo-leukemia, the reason may be an unusually rapid regeneration of the blood cells.

Deutsche medizinische Wochenschrift, Berlin and Leipsic.

53 (XXXII, No. 32.) *Ueber Lysol-Vergiftung (poisoning). F. Blumenthal.
54 Einige seltene Nachkrankheiten im Verlauf des Typhus abdominalis (rare after-affections). M. Pfister.
55 Appendicitis Equally Frequent in Women and Men.—Die Blinddarmentzündung bei Männern oder bei Frauen häufiger? Karrenstein.
56 Alkalized Buttermilk in Infant Feeding.—Weitere Mitteilung ueber die Verwendung der alkalisierten Buttermilch als Säuglingsnahrung und ueber die Dauerpräparate der alkalisierten Buttermilch. L. Moll.
57 *Retention of Anterior Wall of Frontal Sinus in Operative Treatment of this Sinusitis.—Eine neue Methode zur Erhaltung der vorderen Stirnhöhlenwand bei Radikaloperationen chronischer Stirnhöhleneiterungen. G. Ritter.
58 Die Anzeigen zur Radikal-Operation der Prostatiker. B. Goldberg.
59 (No. 33.) Resultate der Frühoperation bei Appendicitis (early operation). H. Kümmell.
60 *Experimentelle Untersuchungen ueber die Magensaft-Secretion beim Menschen (secretion of gastric juice in man). A. Bickel.
61 *Ueber chronische Dysenterie und ihre Behandlung. H. Meyer.
62 Ueber Malachitgrün-Nährböden zum Nachweis von Typhus- und Paratyphus-Bacillen (nutrient media). J. Leuchs.
63 *Beitrag zur Behandlung Basedowscher Krankheit mit Röntgen-Strahlen. J. Sklodowski.

53. **Lysol Poisoning.**—Blumenthal mentions that about 100 cases of lysol poisoning come under treatment in Berlin every year. Even when the stomach is not rinsed out for two or three hours afterward, it is yet possible to evacuate a large proportion of the lysol. His postmortem findings and chemical studies have demonstrated that lysol is not a poison for the blood, but acts mostly on the cell, especially on the liver cells. The stomach should be rinsed until there is no longer trace of lysol. It has been found sometimes that even after all trace of the lysol has disappeared, further rinsing a couple of hours later will show more lysol, probably due to elimination into the stomach with consecutive reabsorption in the intestines unless removed by rinsing the stomach. No antidote is known to date, he states, but if the patient survives the first twenty-four hours he is liable to recover and to be free from serious after-effects. Blumenthal believes that an antitoxin is formed to protect against the lysol, and that glycuronic acid —which is excreted in large amounts—represents the antitoxin, or at least has some share in the neutralizing process. The lysol has an affinity for fat, and consequently penetrates into the cell through the lipoid substance. The cell then reacts to this invasion by producing sulphates and glycuronic acid out of its own supply of albumin and carbohydrates. They are produced in excess and act on the intruding poison like a true antitoxin, although, unlike the true Ehrlich antitoxins, they do not pass into the blood to any extent.

57. **To Retain Anterior Wall of Sinus in Frontal Sinusitis.**—Ritter opens up the frontal sinus through the wall of the orbit and bores a passage slanting from the highest point downward into the sinus, which allows curettement and drainage with a long strip of gauze.

60. **Secretion of Gastric Juice.**—Bickel's research has demonstrated beyond question that the most various stimuli affecting the organs of taste or smell are capable of inducing a secretion of gastric juice when the stomach mucosa is resting

of of increasing an already existing secretion. This same effect follows stimulation of taste or smell whether the sensations are agreeable or disagreeable. The quality of the gastric juice secreted seems to be constantly about the same in man, but the quantity secreted varies widely at different times and with different stimuli. His experiments were made on a young woman with a fistula into the stomach, after esophagotomy. The findings speak most decidedly, he thinks, against the assumption of "hyperchlorhydria" as an increase in the proportion of acid. He assumes that the gastric juice represents about a constant substance, and that the symptoms attributed to hyperchlorhydria are in reality the effect of the quantity of the secretion and of motor phenomena, instead of any change in the composition of the gastric juice.

61. **Treatment of Chronic Dysentery.**—The 3 cases of chronic dysentery described by Meyer came under treatment in Dresden, and suggest the importance of examining for amebæ even when there is no history of a residence in the tropics. They also suggest the advisability of tentative treatment with ipecac and iodoform enemas even when amebæ are not found at first in the stools, after exclusion of intestinal tuberculosis, gastric or pancreatic achylia, fermentative dyspepsia or other cause for chronic diarrhea. He was much gratified with the results of treatment with ipecac given with a few drops of opium and peppermint, supplemented by high rectal injections of about 250 c.c. of a solution of 5 gm. iodoform in 1,000 gm. of mucilage of gum arabic, given in the knee-elbow position under high pressure, with an attempt afterward to massage it up into the colon. The iodoform is left in the intestines for about ten minutes and the larger part is then washed out with two enemas of water. If the amebæ are ensconced in the appendix it may be necessary to remove that structure before the affection can be cured.

63. **Roentgen Treatment of Exophthalmic Goiter.**—Sklodowski reports a case of exophthalmic goiter in a girl of 15 of six months' duration. Roentgen treatment was applied, half of the thyroid gland being exposed at a distance of 20 cm. for ten minutes at a time. The improvement after less than a month of this treatment was striking. The girl gained over 13 kilos in weight in 16 weeks and the sweats and nervous condition were improved although the other symptoms persist.

Jahrbuch f. Kinderheilkunde, Berlin.

Last indexed, page 79.

64 (LXIII, No. 6.) •Die Kinder-Tetanie (Spasmophilie) als Calcium-Vergiftung (intoxication). W. Stoeltzner.
65 •Antitoxin und Eiweiss (albumin). P. H. Römer and H. Much.
66 Die Ernährung mit "Holländischer Säuglingsnahrung" ein Butter-Milch-Gemisch-Dauerpraparat (Buttermilk that will keep). H. Koeppe.
67 Studies in Regard to Buttermilk in Infant Feeding.—Einleitende Bemerkungen. P. Selter(Solingen).—Macht Buttermilch Rachitis? M. Cantrowitz.—Ist Mehlzusatz zur Buttermilch notwendig? Id.—Ueber die Indikationen der Buttermilch-Ernährung. C. Brehmer.—Ueber die Störungen bei der Buttermilchernährung. Id.—Ueber Säuglingsernährung mit gesäuerter Vollmilch. W. Nebel.
68 (LXIV, No. 1.) •Ueber Lymphozytose der Cerebrospinalflussigkeit bei kongenitaler Syphilis und ihre diagnostische Bedeutung. L. Tobler.
69 Ueber 2 atypische Myxödem-Fälle. Bernheim-Karrer (Zurich).
70 Intermittent Fever in Pneumonia.—Zur Kenntnis der Lungenentzündung mit Intermittierendem Fieberverlauf. F. v. Szontagh.
71 •Family Cases of Scarlet Fever Nephritis.—Zur familiären Häufung der Scharlach-Nephritis. F. Spieler.
72 Ein Beitrag zur Erläuterung diverser Fragen aus dem Gebiete der Diphtherie-Serum-Therapie. E. J. Gindes.

64. **Tendency to Tetany Due to Lime in Infants' Food.**—Stoeltzner has been continuing Finkelstein's research on the constituents of cow's milk to find which is responsible for what he calls "spasmophilia." He thinks that the phenomena observed incriminate the lime in cow's milk as the cause of the tendency to tetany. These conclusions, he states, harmonize with the results of recent physiologic research on the lime salts, such, for instance, as the fact that the presence of small amounts of calcium salts is indispensable for success in the experiments with the isolated, still living heart. The pulsations of the heart cease unless the fluid pumped through it contains the appropriate calcium salts.

65. **Intestinal Absorption of Antitoxin.**—Römer and Much relate recent research which confirms their previous assertions in regard to the permeability of the intestinal wall for antitoxin during the first few days after birth. This permeability grew less as the animals (calves) increased in size. Their experiments further showed that the intestinal absorption of albumin from horse serum, thus a heterologous albumin, proceeded in like manner. The absorption was much greater when the antitoxin was ingested in the milk of the immunized mother than when the milk was given from the bottle after addition of antitoxin in the form of antitoxic horse serum. The further fact was established that in cows treated with horse antitoxin the antitoxin was modified in some way so that as it passed into the milk it acquired the properties of cow antitoxin, and was absorbed in the digestive tract of the calf as perfectly as actual cow antitoxin.

68. **The Cerebrospinal Fluid in Congenital Syphilis.**—Tobler reports that in 14 cases of congenital syphilis pronounced lymphocytosis was evident in the cerebrospinal fluid in 12 of the infants. The findings were negative in one case and dubious in another. The proportion of albumin was abnormally high in 5 out of the 7 cases. These characteristic findings in the cerebrospinal fluid were manifest at a period before any other symptoms suggested the positive presence of syphilis. The syphilitic affection of the parents was the only clue to syphilis in the child in some cases, but the characteristic findings in the spinal fluid were soon followed by other signs of the inherited disease. The brain and spinal cord in some of these children when examined later showed unmistakable evidences of an inflammatory meningitic process with effusion.

71. **Scarlet Fever Nephritis in Families.**—Spieler observed 14 instances in which 2 members of the same family had nephritis as a complication of scarlet fever, and 3 instances in which more than 2 members of the family were affected. His total experience includes 83 families, with 186 children with scarlet fever; of this number 35 families, with 83 children, presented 51 cases of nephritis. He thinks that in certain families an unmistakable predisposition to nephritis exists.

Münchener medizinische Wochenschrift.

73 (LIII, No. 24.) •Dietetic Treatment of Exophthalmic Goiter.—Ernährungstherapie der Basedowschen Krankheit. K. Ali (Uchtspringe).
74 Behavior of Typhoid Bacilli in Blood in Respect to Bactericidal Substances.—Ueber das Verhalten der im Blute der Typhuskranken nachweisbaren Typhusbazillen gegenueber der bakteriziden Wirkung des Blutes. Eppenstein and Körte.
75 Action of Chalybeate Waters on Metabolism.—Ueber die Wirkung der Stahlwässer auf den Stoffwechsel. Vandeweyer and Wybauw.
76 Ueber Leukoderma bei Lues, bei Psoriasis und bei Ekzema Seborrhoicum. Jesionek.
77 Importance of Fat in Food of Nursing Women.—Art und Menge des Fettes in der Nahrung stillender Frauen und die Wirkung seiner Entziehung auf das Milchfett. Engel and Plaut.
78 Prophylaktische Antisepsis. Credé (Dresden).
79 Zur konservativen Behandlung der Nasennebenhöhleneiterungen (sinusitis). Heermann.
80 Suction Treatment of Sinusitis.—Kritische Bemerkungen ueber die Sondermannsche Saugmethode bei Erkrankungen der Nasennebenhöhlen. W. Uffenorde.
81 Beitrag zu den congenitalen Ankylosen der Finger-Gelenke. H. Hoffmeyer.
82 •Rapid Test for Albumin in Urine.—Eine Methode den Eiweissgehalt eines Harnes mit hinreichender Genauigkeit für klinische Zwecke in einer Stunde zu bestimmen. G. Buchner (Munich).
83 (No. 25.) To Distinguish Streptococci.—Beiträge zur Unterscheidung der Streptokokken. E. Baumann.
84 •Auscultation of Spine, Sacrum and Pelvis.—Die Auskultation der Wirbelsäule, des Kreuzbeins und des Beckens. Ludloff.
85 Ueber die Wendung bei Placenta Prævia (version). R. Jolly.
86 Surgical Notes from Japan.—Kriegschirurgisches aus Japan. A. Trentlein.
87 Zur Frage der Säuglingsernährung in Arbeiterkreisen (infant feeding in wage-earner circles). J. Spaether.
88 •Ueber Behandlung mit Hetol bei Keratitis parenchymatosa (sodium cinnamate). P. Cohn (Mannheim).
89 Ein neuer Apparat zur Vornahme von Sehprüfungen (testing vision). A. Beck.
90 Fluid Media for Cultivation of Anaerobics.—Die einfachste Methode der Anaerobenzüchtung in flüssigem Nahrboden. F. Reuschel.
91 Zur Färbung der Spirochæte pallida (stain). R. M. Berger.
92 Value of Statistics for Question of Rapid Delivery in Eclampsia.—Der Wert der Statistik für die Frage der Schnell-Entbindung bei der Eklampsie. W. Liepmann.
93 To Reduce Possibility of Infection in Laparotomies.—Das Theilhabersche Verfahren zur Verminderung der Infektionsmöglichkeit bei Operationen in der Bauchhöhle. L. v. Stubenrauch.
94 Die Krankheit des Kaisers Sigmund (1400-1437). W. Ebstein.

73. **Dietetic Treatment of Exophthalmic Goiter.**—Alt asserts that a diet adapted to the special needs of the metabolism in exophthalmic goiter is capable of brilliantly successful results, as he has demonstrated by his own experience. Two years ago he reported extremely favorable results with dietetic treatment of myxedema, and his experience with exophthalmic goiter has been fully as remarkable. The internal oxidations are augmented in the latter, the metabolism accelerated, as in case of artificial hyperthyroidization. Some of the components of the general transformation and interchanges of matter are abnormally weak, and some are unusually strong. In the idiocy of myxedema it was found that the patients assimilated only a very small amount of the phosphorus ingested in their food. Under thyroid treatment their power of assimilating phosphorus increased, and administration of phosphorus combined with an albumin preparation gave excellent results. In 12 cases of exophthalmic goiter considerable insufficiency on the part of the kidneys was revealed by functional tests with salt. Most of the patients had more or less edema. By putting them on a diet free from salt a balance was finally established between the amount of salt ingested and that eliminated. The edema vanished and the heart action at once improved, the pulse rate approximated normal and the subjective disturbances subsided. Illustrations of patients "before and after" show the remarkable benefit derived in four instances, and similar illustrations of patients with myxedema confirm the advantages of scientific dietetic treatment. Alt declares that every sanitarium for nervous and mental affections should have a well-equipped laboratory for research on the metabolism as an indispensable adjunct. In his cases of exophthalmic goiter the demand for calories was strikingly high, two or three times the normal demands, or even more. Intestinal absorption was also good, even in the cases with unusually active peristalsis and three or five stools a day. One patient required 100 calories per kilo of body weight and thrived on them. In this and some other cases phosphorus was taken up in the intestines with unusual completeness and was eliminated in the urine in abnormally large amounts. This would soon have led to phosphorus starvation in the organism and deterioration of the bones if phosphorus had not been supplied from without in sufficient quantities. These observations on the augmented output of phosphorus in exophthalmic goiter throw light on the cases which have been reported by Latzko and others in which exophthalmic goiter became complicated with osteomalacia. The diet in the cases reported by Alt was distinguished by reduction of the amount of salt, not more than 4 gm. a day being allowed, the ingestion of fluids also being restricted; the amount of carbohydrates was also reduced in proportion to the low degree of tolerance, and the food was planned to supply large amounts of calories, in the form of albumin and fat, for which milk, cream, unsalted butter, rice, meat, eggs and fish were the main reliance, with milk first and always. On this diet the patients all gained in weight without the gain being due to retention of water, while all the symptoms of the disease subsided to a remarkable extent, with an unmistakable gain in the functional capacity of the previously insufficient organs. He mentions in conclusion that the exophthalmic goiter in his patients had been preceded by acute articular rheumatism, prolonged grippe or an intestinal affection with icterus, in nearly every instance. The particulars of some of the cases are given in detail with the daily dietary.

82. **Rapid Test for Albumin in Urine.**—Buchner gives an illustration of this simple outfit. It consists merely of two bottles, two test-tubes, the graduated test-tube for the albuminimeter, and a flat piece of cork with a hole in the center to serve as a standard for the albuminimeter. The test is based on the complete coagulation of the albumin in urine, first heated and then treated with nitric acid and a saturated solution of salt. The clear, filtered urine is poured into a test-tube to a mark representing 8 c.c. It is then heated to boiling, and two or three drops of nitric acid are added and 2 c.c. of a saturated solution of table salt. After being well shaken the contents of the tube are poured into the albuminimeter. After an hour's precipitation each c.c. of the deposit of albumin at the bottom of the tube corresponds to 1 per thousand of albumin in the urine. Comparative tests of this technic with Esbach and other tests showed remarkably concordant findings.

84. **Auscultation as an Aid in Diagnosis of Surgical Bone Affections.**—Ludloff expresses surprise that surgeons pay so little heed to the important findings possible with auscultation of the spine, sacrum and pelvis. Crepitation can often be heard and will reveal the cause of mysterious pains in certain cases. In one of the cases described, after fracture of the clavicle, the other complaints of the patient were ascribed to hysteria or simulation and received scant attention for eight years, during which the patient consulted various authorities. Finally auscultation revealed crepitation over the seventh cervical vertebra, and a bony prominence was discovered. A radiogram then disclosed that this vertebra had been fractured, evidently at the same time as the clavicle. In other cases elderly women complained of pains in the region of the sacrum. As palpation and inspection revealed nothing wrong, they were referred to a gynecologist, but he could find nothing to explain the pain, and radioscopy was equally fruitless. Examination with the stethoscope and phonendoscope revealed a distinct grinding and cracking, generally at the junction of the sacrum and vertebræ, the sounds resembling those heard at the knee in case of arthritis deformans. Auscultation of the entire spine then usually revealed a spot where these sounds were heard loudest. Examination of this spot by radioscopy then generally disclosed some small deposit on the joint, a focus of arthritis deformans in the spine. A lesion of this kind is liable to entail not only sacral pains, but lumbar and sacral neuralgia. When the focus is at the emerging point of the sciatic nerve it is liable to induce sciatica, and when it is in the back of the neck, occipital neuralgia is a frequent consequence. Electric treatment of these non-traumatic cases is of course useless, while the process heals under relief from pressure with massage and medico-mechanical measures. Auscultation is even more instructive, he states, in the traumatic cases.

88. **Treatment of Parenchymatous Keratitis.**—Cohn reports 2 cases cured by instillation of 1 per cent. sodium cinnamate with 1 per cent. cocain in physiologic salt solution. Improvement was apparent in a few days.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

GENERAL MEDICINE. Edited by F. Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, M.D., Professor of Medicine, Chicago Clinical School. Practical Medicine Series, comprising Ten Volumes on the Year's progress in Medicine and Surgery under the Editorial Charge of G. P. Head, Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Vol. VI. Series 1906. Cloth. Pp. 363. Chicago: The Year Book Publishers.

HEART DISEASE AND ANEURISM OF THE AORTA, with Special Reference to Prognosis and Treatment. By Sir William H. Broadbent, Bart., K.C.V.O., Physician in Ordinary to H. M. the King, and to H. R. H. the Prince of Wales, etc., and J. F. H. Broadbent, M.A., M.D., F.R.C.P., Physician to Out-Patients, St Mary's Hospital; Assistant Physician to the London Fever Hospital. Fourth Edition. Cloth. Pp. 479. Price $4.00. New York: William Wood & Company.

GASTRIC SURGERY. Being the Hunterian Lectures, Delivered Before the Royal College of Surgeons of England on February 19-21, 1906, by H. J. Paterson, M.A., M.B., B.C., Hunterian Professor of Surgery and Pathology at the Royal College of Surgeons, Assistant Surgeon to the London Temperance Hospital. Cloth. Pp. 181. Price, $2.00 net. New York: William Wood & Company.

NATURE AND TREATMENT OF CANCER (Some Methods of Hypodermic Medication in the Treatment of Inoperable Cancer). By J. A. Shaw-Mackenzie, M.D., Lond. Third edition, revised and enlarged. Cloth. Pp. 99. Price, $1.25 net. New York: William Wood & Company.

RATIONAL ORGANOTHERAPY, with Reference to Uroseniology. By A. v. Poehl, J. v. Tarchanoff, Alf. v. Poehl and others. Translated from the Russian Text. Vol. I. Cloth. Pp. 239. Price, $3.00 net. Philadelphia: P. Blakiston Son & Co., 1906.

NEW SERUM-THERAPY. By D. Montgomerie Paton, L.R.C.S. and L.R.C.P. Cloth. Pp. 311. Price, $2.25 net. New York: William Wood & Company.